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ABSTRACT

This guide, itself composed of four modules, describes the preparation and use of modular materials for training programs in educational planning, educational administration and management, and educational facilities design. An initial module sets the context by considering the planning of an overall training program into which use of an individual module can be fitted. The major module in the series, module II, then focuses on the development of skills in writing modular, self-instructional training materials, and involves users in the preparation of a specific training module in their own subject areas. Using and adapting existing training materials into modular form is discussed in module III, which requires users to evaluate and adapt materials in their own subject areas. The final module explains the preparation of user guides for instructors and trainees. (LMM)

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Training materials
in educational planning,
administration and facilities

A Self-instructional Guide to Authors and Users of Self-study Materials

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

PREFACE

The Division of Educational Policy and Planning (EPP) is in the process of developing training materials in the area of Educational Planning, Administration and Facilities.

This project, which started in 1980, has gone through various stages of trial and error and testing of the materials in training courses organized at regional and national levels with the cooperation of the various Unesco Regional Offices for Education.

The transformation of technical texts into pedagogical lesson units in order to facilitate self-learning proved to be a difficult task and it should be stressed in this connection that the training clusters which will be produced in the period 1982-83 will be further improved through testing and experimenting. Such testing and revising will be a continuous undertaking of the Division with the cooperation of regional and national specialists and institutions working in this area.

Ministries of Education and national training institutions are encouraged to use freely the materials produced under this project and adapt them to national and/or local situations. No prior agreement from Unesco will be necessary for such use, provided the original source is being mentioned.

The present cluster entitled "A self-instructional guide to authors and users of self-study materials" was prepared with the assistance of Mr. Anthony R. Kaye, Institute of Educational Technology, the Open University, United Kingdom.

A SELF-INSTRUCTIONAL GUIDE TO

AUTHORS AND USERS OF SELF-STUDY MATERIALS

This Series is made up of the following components:

- Introduction and Study Guide
- Module I : PREPARING SELF-STUDY PROGRAMMES
- Module II : PLANNING WRITING AND TESTING SELF-STUDY MATERIALS
- Module III : EVALUATING AND ADAPTING OTHERS' MATERIALS
- Module IV : DEVELOPING GUIDELINES FOR USERS

INTRODUCTION AND STUDY GUIDE

INTRODUCTION

This guide, itself composed of four modules, is about the preparation and use of modular materials for training programmes in :

- educational planning
- educational administration and management
- educational facilities design

I am assuming that you are involved in such a programme yourself in one of several possible roles. Look at the diagram below:

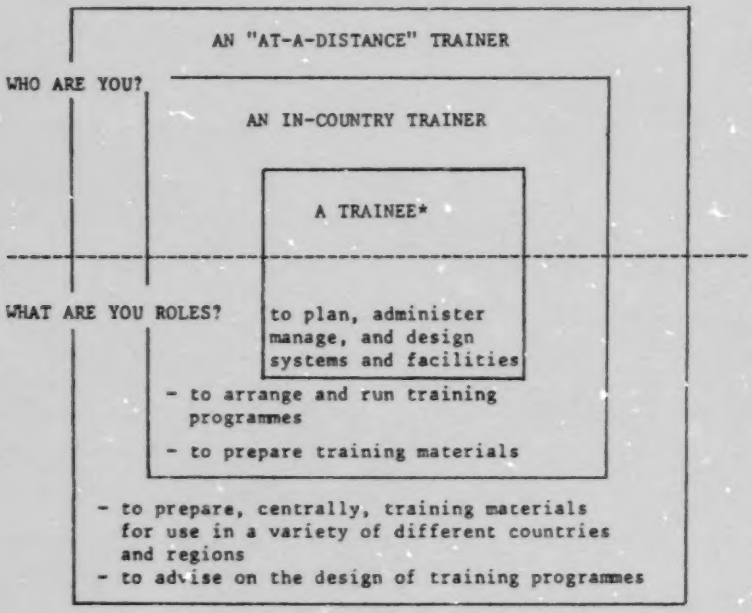
AN "AT-A-DISTANCE" TRAINER
WHO ARE YOU?
AN IN-COUNTRY TRAINER
A TRAINEE*
WHAT ARE YOU ROLES?
to plan, administer manage, and design systems and facilities
- to arrange and run training programmes
- to prepare training materials
- to prepare, centrally, training materials for use in a variety of different countries and regions
- to advise on the design of training programmes

Figure 1 : Users of this Series

* *Please note that when I use the expression 'trainee' in this Series, I am referring to practising managers, administrators, planners and facilities designers who wish to develop their skills and knowledge through various forms of in-service training, and are thus taking on the role of trainees.*

Which of the categories or roles in the diagram above most closely resembles your own situation as a reader of this Series?

If you are an 'at-a-distance' trainer, with responsibility for the central production of training materials for a range of different locations, or an in-country trainer working on a specific training programme, then this entire Series is designed to help you in these tasks in various ways:

- *Module I is concerned mainly with the overall planning of training programmes which have major independent study elements*
- *Module II is specifically aimed at providing guidance in writing self-study modules*
- *Module III looks at the issues involved in using, adapting, and 'transforming' other peoples' materials*
- *Module IV provides advice on the writing of guidelines on independent study methods for both instructors and trainees.*

If, on the other hand, you are a practising administrator or planner wanting to update or extend your knowledge through independent study methods (as a 'trainee') then you might find it helpful to read through Modules I and II to give you an idea of the principles underlying the design of self-study modules.

One point, on terminology, before you start: we have used the expression 'module' both in this Series and to describe subsequent packages of written materials that will be produced as part of this overall Project. You may be wondering precisely what meaning we are attaching to this word; basically we use it to mean:

- an instructional package dealing with a single main conceptual unit of subject matter
- presented in a self-instructional format, and designed with the principal emphasis on learning rather than teaching
- including learning objectives stated in performance terms, and involving active participation by the learner
- sufficiently flexible to be used in a variety of sequences, and in both group study and individual study situations

Note that we could just as well have used the term 'lesson' or 'unit' to refer to the learning package itself. The use of modules, units, or self-instructional lessons as the main core of a training programme does, of course, have serious implications for the overall design of the programme in which they are to be used. The main implication concerns the role of face-to-face and other group activities, which is changed to one of diagnosis, problem-solving, and motivation, rather than that of information transmission - the latter role being taken over by the modular materials.

Figure 2 summarises the main differences between conventional and modular instructional methods.

Read through the entries in this table and then note down below what you would see as the main roles and activities of:

(a) a trainee and (b) a trainer

in a modular training programme

Figure 2 : Attributes of Conventional and Modular Instruction (after Russell J.D. : Modular Instruction, Burgess Publishing Company, Minneapolis, 1974)

ATTRIBUTE	CONVENTIONAL INSTRUCTION	MODULAR INSTRUCTION
Learning Experiences	Lectures, reading of texts Emphasis on teaching and on group instruction	Integral combination of learning experiences. Emphasis on independent study and on learning
Teacher Role	Disseminator of information	Diagnostician, prescriber, motivator, resource person
Objectives	Have to be inferred from content of tests and from reading materials/lecture notes	Explicitly stated in terms of student performance; used as basis for materials selection
Pacing	'Lock step' group pacing	Learner can proceed at own pace
Individualisation	Group oriented	Highly individualised; learner can select or reject materials as required
Participation	Generally passive:listening, reading	Generally active: self-assessment, learning by doing
Achievement	Individual differences expected	Mastery of a criterion performance by all learners is expected
Time	Usually constant for all learners	Time spent is that necessary for mastery: may vary very much between individuals
Flexibility	Fixed periods for lectures and group activities	Timing can fit in with learner's requirements
Reinforcement	Based on occasional tests and end-of-course examinations	Immediate reinforcement through self-assessment tests and materials
Testing	Mainly for grading, norm-referenced	Mainly to give learner feedback, criterion-referenced
Portability	Minimal: based on a live lecture	Maximal: based on independent study materials
Revisions	Often reflect teacher preferences, may involve complete restructuring	Based on student performance; simple to revise modular segments of course
Course Success	No built-in provision for on-going evaluation other than teacher's subjective judgement	Based on achievement or not of specific objectives by learners, leading to revision of specific modules as needed

You might have noted some of the following points:

(a) a trainee:

- *can work at his or her own pace*
- *can select relevant learning objectives and choose to master these and discard others not appropriate to his or her situation*
- *can spend as much time as necessary to master these objectives, rather than be obliged to follow a group rhythm*
- *is expected to be actively involved in the learning process, and to check progress through trying out self-assessment tests and exercises*
- *is not tied to a particular time or place when using modular training material*

(b) a trainer:

- *is available to help with study problems*
- *is expected to diagnose difficulties being experienced by the trainee*
- *can provide extra resources (e.g. information) to trainees who wish to develop their skills further*
- *is not expected to be the primary source of the information needed by the trainee*

The rapid analysis which you have just carried out, of the key differences between conventional and modular instructional methods, should be encouraging you to view training in terms of a learning process rather than a teaching process. Read through the quotation below:

"It has become a truism to say that attention should be focused on learning rather than on teaching, but the implications are usually ignored. It is rare, for example, to find a course in higher education in which students do not spend considerably more time in independent study than in contact with a teacher. Yet a combination of lectures and independent study is invariably called the "lecture method" and a combination of discussion groups and independent study is called the "discussion method". There is no ambiguity in this nomenclature as the independent study element is taken for granted, but it does support the tendency of teachers to define a course solely in terms of its contact hours. We consider, however, that it is more logical to reverse the conventional view and thus to define a course largely in terms of its independent-study element. When this is done it becomes possible to define teaching methods in higher education as aids to independent study. This position is consistent with an emphasis on learning rather than teaching and it recognises that the greater part of a student's time is actually spent in independent study, and that when he leaves it will often be the only method available to him". (1)

(1) Source: MACKENZIE N., ERAUT M. and JONES H. Teaching and Learning: An Introduction to New Methods and Resources in Higher Education, Unesco/IAU, PAris, 1970, pp. 133-134.

This quotation is obviously referring to conventional full time higher education courses in a college or university environment. But if even in such an environment, with most activities primarily scheduled around lecture and workshop timetables, it is maintained that face-to-face teaching should be seen as an adjunct or aid to independent learning, how much truer this must be in your situation. Those of you who are potential trainees are in full-time jobs, many with family responsibilities as well. Surely any scheme of in-service training should rely predominately on helping you to become independent learners, updating your knowledge and skills as needed without, as far as possible, suffering the constraints of time and place imposed by conventional face-to-face training methods?

I hope that the four modules which follow might help you realise how this idea of independent learning might be put into practise in your own situation.

STUDY GUIDE

This Series is primarily aimed at helping you to develop your skills in writing modular self-instructional training materials. Module II concentrates specifically on this, and is by far the major module in the Series, involving you in the preparation, from scratch, of a training Module in your own subject area. Module I sets the context for this activity by considering the planning of an overall training programme into which use of your module can be fitted.

Module III is concerned with using, and adapting into modular form, other people's training materials : you will be asked here to evaluate and adapt materials in your own subject area.

Module IV concentrates on the preparation of user guides to your module - for instructors and for trainees.

The entire Series has been prepared on the assumption that you will be actively working, and producing material, during your study of each Module. Each Module section concludes with a major activity resulting in a 'product' which you will, I hope, be able to use as training material. The nature of each of these 'products' is summarised in the Table below:

Section	'Product'
Module I : Section 1	A target population profile
Section 2	Overall training programme structure
Module II : Section 1	An outline plan for your module
Section 2	A draft of the first part of your Module
Section 3	A draft of your complete Module
Section 4	A developmentally tested draft of your Module
Module III : Section 1	An evaluation of relevant existing materials
Section 2	A 'transformed' draft of a content document
Module IV : Section 1	An instructor's guide to your Module
	A trainees' guide to your Module

Using the Module

This is traightforward: at various points in the text you will find giant exclamation marks (!) and question marks (?) in the left-hand margin. These indicate an activity for you to carry out (!), or a question to answer (?). In general, after each activity or question instruction, there is a short answer or commentary typed in italics. Check your own work against this answer/commentary when you have completed it. For the major exercises, (outlined in the table on page 8) there is no specific 'right answer' or commentary - you should check your work on these activities against the guidelines given in the Section or Module concerned.

You will probably need to set aside 20-40 hours to work through the Series, depending on the degree of your existing experience of writing self-instructional materials. This may seem a long time, but if you follow the guidance given here, remember that it will result in a specific product: a draft module in a topic of your own choosing, with associated guidance material for users.

TRAINING MATERIALS IN EDUCATIONAL PLANNING, ADMINISTRATION, AND FACILITIES

A SELF-INSTRUCTIONAL GUIDE TO AUTHORS AND USERS OF SELF-STUDY MATERIALS

MODULE 1 : PREPARING SELF-STUDY PROGRAMMES

Section 1 : Defining Your Target Population

Section 2 : Systematic Planning of Training Programmes

Supplement : A review of Learning Methods

Division of Educational
Policy and Planning
U N E S C O

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MODULE 1: PREPARING SELF-STUDY PROGRAMMES

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MODULE 1 : PREPARING SELF-STUDY PROGRAMMES

OVERVIEW : This module is made up of three principal parts:

- Section 1 is aimed at helping you to draw up a profile of your potential trainees: the people for whom you will be writing or preparing training modules in your own specialist subject area
- Section 2 is concerned with the systematic planning of training programmes which contain both self-study and more conventional, face-to-face, training components
- the Supplement, which is linked to Section 2, provides a review of learning methods, from amongst which you will be able to choose the ingredients most suited to the programme which you are planning.

OBJECTIVES: After working through this Module, you should be able to:

1. Identify the main steps involved in the systematic design of in-service training programmes
2. Apply these steps to the overall design of an in-service training programme covering your own specialist field of knowledge, by:

- defining the main relevant characteristics of the target population
- identifying their performance problems
- listing potential resources for, and constraints on, a suitable training programme
- devising the overall aims and outline structure of a training programme

SECTION 1 DEFINING YOUR TARGET POPULATION

Summary : The purpose of this section is to persuade you to start off this module by thinking about your trainees, their needs and characteristics. You will be asked to draw up a trainee 'profile' which you will need to use at various stages as you work through the rest of this Series.

Who are my students?

Refer back to Figure 1 on page 1 of the introduction to this Series. As either an "at-a-distance" trainer, or as an in-country trainer, you are involved in the training and/or management of educational planners, administrators or educational facilities staff (the 'trainees' identified in the centre box in Figure 1). These staff are working under relatively difficult conditions in countries where there are pressing educational and schooling problems to be solved. You are aware of these problems, and have yourself acquired, or have access to, specialist knowledge which you believe can help to overcome some of them.

However, you are experiencing difficulties in seeing how this specialist knowledge - in, say, budgetary techniques, or school mapping, or facilities design - can be made available to hard-pressed local staff working in national and regional planning offices, in Ministry departments, and in school, and college inspectorates.

You have experience of running conventional (group, face-to-face) training courses, and of preparing materials for live presentation - such as charts and hand-outs. However, you have little or no experience of writing self-instructional training modules.

When I first started planning this module, I tried to picture to myself the situation and characteristics of its eventual users. I hope that the description which I have written above is reasonably accurate, because the whole of this Series is based on this portrait of what I see as my 'typical student'.

One of the first principles underlying the preparation of good self-study (or self-instructional) material is to start off with a clear idea of who are your eventual students. This is what I have tried to do, very schematically, above, for those of you who will be using this Series. In the jargon of educational technology, we would call such a description, in its more detailed form, a student profile or target population profile.

I am not able to produce a detailed student profile of those of you studying this Series because the Series itself is aimed at trainers and managers working in a very wide range of different countries and contexts throughout the World, and with different specialist backgrounds. This is one of the problems, of course, of preparing materials on behalf of an international organisation such as Unesco!

Who are your Trainees?

You, however, should be in a more fortunate position than me in this respect, because you are concerned, I hope, with a more precisely defined target group - a subset of the population represented by the 'TRAINEE' box in Figure 1. Your target group members have specified roles (administrator, planner, ...), and are working in a specific national or regional context.

You are now embarking on the first stages of planning a training module in your own subject. What do you think are the most important general headings to use in drawing up a profile of your target population of trainees or students? Think about

the things which you would need to know about your students before starting on the planning of a training programme. And assume that the training programme will include both group (face-to-face) work and the use of self-study modules.

Write some headings down on a piece of paper or in your notebook.

You might have written some of the following headings: numbers, age, sex, qualifications, relevant professional experience, skills, professional problems, information and training needs, motivation for training, geographical distribution, access to existing training materials and facilities, level of literacy and numeracy skills, domestic circumstances, attitudes towards in-service training, previous study habits and/or experience of training etc.

In figure 1 overleaf you will find an example of a check-list of features which I have often found useful in drawing up target population profiles. You will see that the features are arranged according to the relevance of different features for planning various aspects of a training programme:

- content and objectives of the programme (1: Training Programme Data)
- eventual study patterns of the trainees (2: Life-style Data)
- teaching methods and media (3: Infrastructure Data)
- production and distribution of learning materials (4: Demographic Data)

Not all of the features in this check-list will be relevant to the training programmes in which you are involved, but most of them will be of some importance, especially for programmes which are going to involve a significant proportion of self-study work. For example, if your eventual trainees are to be expected to work through modular training materials on their own - in their homes or in their offices - it will be useful for you to know:

Figure 1 : Target Population Checklist (1)

1. EDUCATION/TRAINING PROGRAMME DATA	
11	OCCUPATION
12	EDUCATIONAL BACK-GROUND
13	RELEVANT WORK DATA
14	EDUCATION/TRAINING NEEDS
	141 KNOWLEDGE
	142 SKILLS
	143 ACTIVITIES
15	MOTIVATION
16	STUDY HABITS
17	OTHER DATA

2. LIFE STYLE DATA	
21	AVAILABLE STUDY TIME
	212 WORKING HOURS
	213 TRAVELLING TIME
	214 TIME ON OTHER ACTIVITIES
22	NON-WORK ACTIVITIES
23	HOUSING CONDITIONS
24	ECONOMICS

3. INFRASTRUCTURE DATA	
31	POSTAL SERVICES
32	OTHER DISTRIBUTION NETWORKS
33	RADIO/TV RECEPTION
34	TELEPHONES
35	ROAD/AIR/RAIL
36	MAINS ELECTRICITY
37	LIBRARIES
38	MEETING PLACES
39	OTHER FACILITIES

4. DEMOGRAPHIC DATA	
41	NUMBERS (OVER-TIME)
42	GEOGRAPHICAL DISTRI-BUTION / ADDRESSES
43	AGE
44	SEX
45	LANGUAGES
46	INCOME LEVEL
47	PLACE OF WORK

PRIMARILY RELEVANT TO → CONTENT AND OBJECTIVES OF PROPOSED COURSE(S)

PRIMARILY RELEVANT TO → EVENTUAL STUDY PATTERNS

PRIMARILY RELEVANT TO → TEACHING METHODS AND MEDIA

PRIMARILY RELEVANT TO → PRODUCTION AND DISTRIBUTION OF LEARNING MATERIALS

(1) From Kaye A.R. and Rumble G.S. Distance Teaching for Higher and Adult Education, Croom Helm, London

- their existing study habits (item 16) : have they previous experience of using self-instructional materials or not?
- the time they will have available for study (items 212, 213, 214)
- any relevant information on communications facilities : postal services if there might be a possibility of correspondence tuition as an adjunct, telephones for helping to cope with urgent study problems, access to radio receivers if there is any possibility of using radio as a component of a training programme
- numbers and geographical distribution of potential trainees, so that the printing and distribution of training materials can be rationally planned

Consider the four headings in Figure 1; try now to spend ten minutes or so writing down some brief notes under each heading which will enable you to define the profile of the 'typical' trainee for whom you wish to design a training programme. Under the first heading ('training programme data') pay particular attention to what you see as the specific training needs of your target group, which, if met, will help to eliminate or reduce the associated problems which the members of your target group experience in carrying out their jobs.

When you have finished these notes, use them to prepare a succint 'typical trainee' profile; write down this profile in the box on the next page.

A PROFILE OF MY TYPICAL TRAINEE

Training Programme Data

Life-style Data

Infrastructure Data

Demographic Data

KEEP THE IMAGE OF THIS TYPICAL TRAINEE IN MIND AS YOU WORK THROUGH THE REST OF THIS MODULE; REFER BACK TO IT AS AND WHEN YOU NEED TO.

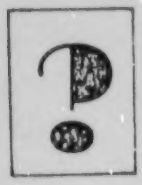
SECTION 2 : SYSTEMATIC PLANNING OF TRAINING PROGRAMMES

Summary : This section briefly reviews the key features of the systematic planning of in-service training programmes and materials. This should provide you with an overall context into which the use of self-instructional modular materials can be fitted. In the course of studying this section, you will be asked to plan the overall structure of an in-service training programme in your field, and identify relevant training needs, resources, and constraints. Associated with this section is a supplement which reviews learning methods in general. You should read this when directed to if you need to revise your experience in the training field.

Is Training the Solution to your Problem?

The principal overall purpose of this entire Series is to give you practice in developing your skills in preparing modular training materials, in your own specialist area of knowledge, for a specific target group.

However, training schemes are doomed to failure unless they are related to specific job performance problems for which in-service training is a relevant and realistic solution. How often have you heard variants of the following statement: ... "the staff of that Department are really falling down in their work : we must establish a job training programme for them straight away". Performance problems in any job situation can be caused by a multitude of different factors - and only some of these are amenable to a training solution.



To take an example: consider the case of a financial planning office that had made a series of inaccurate cost estimates for a medium-term school building programme, resulting in long delays in completion of the buildings, worsening relationships with suppliers, and requests for additional funding, over that originally budgeted.

What do you think, in general, might be the possible causes of such a situation?

You might have listed some of the following :

(i) inaccurate initial cost data

(ii) poor job satisfaction amongst the staff involved, leading to a high turnover of staff and lack of concerted effort

(iii) an unanticipated increase in inflation rates

(iv) inadequate technical information on which to base costs

(v) inadequate levels of skills and knowledge amongst the staff of the planning office

Obviously, in the above example, only if the performance problems can be unambiguously related to item (v) is in-service training a relevant solution. And even then, it might be simpler to bring in one or two more experienced staff to do the job than to embark on a training programme.

In the institution in which I work, a significant proportion of decision-making is done through a complicated committee structure, and there are frequent complaints about how inefficient this can be. One response to this performance problem has been to invest money and staff time in training key people in "committee skills". However, some of the problems of inefficiency may well be solved more effectively by reducing the number of committees and simplifying the decision-making structure, thus eliminating or reducing the need for such training.

In the previous section of this module, you prepared a profile of the target group of trainees for whom you wish to prepare materials. Refer back to this now and try to write down as briefly as possible the performance problems which you see this group as having. Consider whether there might not be other solutions to these problems than training

---

If you can see other, more relevant or realistic, solutions to the performance problem of your target group, then you should :

(i) either stop reading this module now

(ii) or consider another target group and/or another set of problems

If, on the other hand, you decide that in-service training is a complete or partial solution to the problems, then make a note of the reasons for your decision. Also note down what you see as the relevant training and information needs of the target group, elaborating now on what you may have written on these points in the target group profile

Refer now to Figure 2 overleaf, which is a simplified representation of the steps which need to be undertaken in the systematic planning of a training programme.

In respect of the training problem and subject matter with which you are concerned, you should by now have completed the first four of these steps; that is, you should have made notes on :

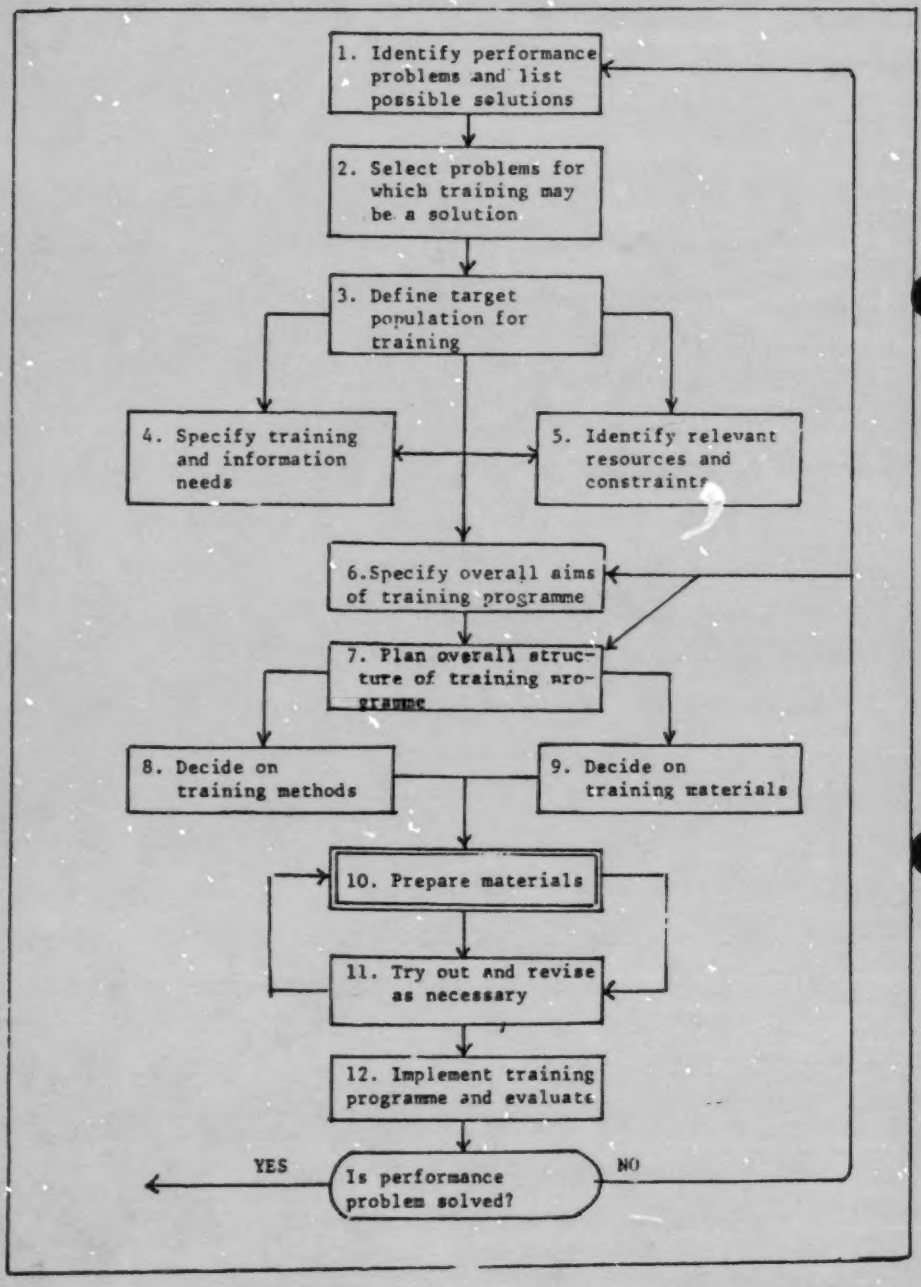
(1) one or more specific performance problems related to your own area of specialist knowledge

(2) the reasons why you believe that training is a possible solution to this (these) problems

(3) the characteristics of your target group of trainees

(4) the training and information needs of this group in respect of

Figure 2 : Systematic Planning of Training


1. Identify performance problems and list possible solutions
2. Select problems for which training may be a solution
3. Define target population for training
4. Specify training and information needs
5. Identify relevant resources and constraints
6. Specify overall aims of training programme
7. Plan overall structure of training programme
8. Decide on training methods
9. Decide on training materials
10. Prepare materials
11. Try out and revise as necessary
12. Implement training programme and evaluate
Is performance problem solved?
YES
NO

the performance problem(s) which you have identified

Resources and Constraints

The next step (No. 5 in Figure 2) is to attempt to identify the resources which might be available for training in your context, and the constraints on the overall design of the training programme.

One of the key resources will be the modular training material which you will be involved in either preparing or using. However, modular materials need to be used within a specified programme, or programmes, and I want you now to imagine a typical programme or framework in which you would see the materials eventually being used. Until you have done this, it will be difficult for you to plan the design of the modular materials in a rational manner. The programme might be a local, national one, or a regional one involving trainees from a number of different countries. You will find in Figure 3 overleaf a table listing various categories of resources which might be available for a given programme.

Figure 3 : Potential Resources for Training

Resource Category	Examples
FINANCE	- for travel and per diem costs for trainees and trainers - for purchase of equipment and materials
SOFTWARE	- training materials - resource materials (e.g. plans, statistical data)
HARDWARE PLANT, EQUIPMENT	- seminar rooms - teaching equipment - access to communications infrastructure (post, radio) - audio-visual aids
PERSONNEL	- practitioners and other resource personnel - documentalists - trainers
TIME	- time for trainees (e.g. scheduled time off work) - time of resource personnel and trainers - time for materials preparation

Use the headings in Table 3 to help draw up a list of major resources (and constraints : i.e. limitations on resources) for the training programme which you are considering

In Panel 1 below is an example of a list of resources that might be available in given country and context for a training programme in Quantitative and Financial Aspects of Educational Planning. I shall be using this imaginary course in this and subsequent sections of the Module, in an attempt to give you some feedback in the form of 'worked examples' to some of the activities you will be carrying out.

Panel 1 : Resources and Constraints for a Training Programme on Quantitative and Financial Aspects of Educational Planning

(i) Finance : sufficient funds for up to three five – day meetings for thirty trainees drawn from different parts of the country, and for preparation, duplication, and distribution of a manual of up to 100 pages in length

(ii) Software : actual cost and planning data from the Ministry of Education, as well as reference materials which could be used as a basis for writing a manual)

(iii) Hardware/Plant Equipment : two meeting rooms fitted with overhead projectors and basic furniture; free use of national postal services for mailing material to and from the trainees

(iv) Personnel : one instructor full-time for two 5 day workshops; access to specialist practitioners

(v) Time : trainees would be given three hours per week of working time for independent study (of training materials), over a twelve week period, together with two weeks free to attend workshops. And one specialist financial planner can be released for three months to help prepare training materials

The Aims of Your Training Programme

You should now have sufficient information to be able to proceed to the next step shown in Figure 2 : specification of the overall aims of your training programme (step 6). These aims are dependent on the previous three steps (identification of target population, of needs, and of resources/constraints).

Try to note down now the broad aims of your proposed training programme, in the light of the needs of your target population and the resources at your disposal for training. Try to define aims in a way that relates their achievement clearly to resolution of the job performance problems which you identified earlier.

In Panel 2 you will find some example aims related to the performance problems of a financial planning office.

Panel 2 : Example Aims for a Training Programme in Quantitative and Financial Aspects of Educational Planning

The following aims are related to identified performance problems in techniques of financial analysis, diagnosis and projection in relation to educational enrolments, personnel, and facilities.

The broad aims of a training programme aimed at up-grading the staff involved include:

(i) to convince the staff involved of their need for training and upgrading, and to motivate them to undertaken training

(ii) to provide basic knowledge and skills in quantitative and financial analysis, diagnosis, and projection related to school enrolments, and personnel and facilities needs

(iii) to apply this knowledge and these skills to specific, defined, situations

(iv) to develop team skills amongst trainees with different responsibilities and specialisms, in tackling actual problems

The Structure of your Training Programme

The structure of your proposed training programme (steps 7-9 in Figure 2) will define how the aims which you have just drafted are to be achieved. By structure here I mean the mix and sequence of teaching methods and teaching materials which make up the programme.

I suggested in the Introduction to this Series that it would be helpful to consider in-service training programmes as being, first and foremost, opportunities to encourage trainees to become independent learners,

taking on responsibility for their own professional development. This does not, however, mean that they cannot be helped through provision of support and materials of various kinds. This help can be provided, to my mind, in four broad patterns:

(i) totally independent learning : where the trainee is merely provided with some self-study materials, and left to his own devices

(ii) supported independent learning (distance learning) : through correspondence tuition help, where the trainee is required to submit written assignments to a central resource person/ practioner/trainer for comment and correction

(iii) Group Study methods of various kinds, ranging from student self-help groups, to lectures, workshops, and simulation exercises

(iv) varying combinations of (i), (ii) and (iii) above.

In the supplement to this module, you will find a more detailed description of these four patterns of provision, including examples of independent study materials. You should read through this supplement before deciding on which particular pattern or structure you would like to propose for your own training programme.

Now try to note down the overall structure of the training programme which you are considering. Do not forget to indicate the types of training materials which will be needed, depending on the methods and sequencing which you are proposing. You should also indicate the length of the programme and the administrative arrangements that will be necessary for its execution

An example of a training programme outline, related to the data in Panels 1 and 2, is given below:

Panel 3 : An Outline Structure for a Training Programme in Quantitative and Financial Aspects of Educational Planning

(i) *Training Methods*

A combination of :

- *independent study of modular materials*
- *group meetings and workshops*
- *postal support (to answer queries, to correct and comment on written work).*

(ii) *Timing/Sequence*

- *Initial one-week group meeting (or workshop) to outline the programme to trainees and to convince them of their need for training*
- *independent study of modular materials for 3-4 hours per week over a 12 week period, with four monthly assignments to be completed and returned to an instructor*
- *a one-week workshop at the end of the programme to revise difficult topics, to deal with main problems, and to carry out group simulation exercises.*

(iii) *Materials needed*

- *A set of self-study modules of 30-40 hours overall study time*
- *assignment questions and marking schemes for the instructor*
- *support materials for the workshops for both trainees and instructors*
- *reference materials for use by trainees on request.*

(iv) *Administrative support*

- *one part-time administrator needed during the length of the programme, to receive queries from trainees and see they are dealt with, also to oversee receipt and despatch of assignments.*

In the outline which you have written, you should have covered at least each of the headings (i) - (iv) above. You may have opted for a quite different programme structure to that shown above, but I am assuming

that you would have included in the programme as a fairly major element, the use of modular self-study materials. If you have not (i.e. if your programme is essentially a group study, face-to-face one) then the remainder of this Series will be of little relevance to your needs, as from now on we concentrate on the planning and writing of self-study materials.

SUPPLEMENT : A REVIEW OF LEARNING METHODS (1)

Summary: This supplement reviews learning methods under a number of headings:

- independent learning
- supported independent learning (distance learning)
- group learning methods
- combinations of the above

Examples and illustrations of each method are given. The supplement is linked to Section 2 of the Module text.

Independent Learning

Independent study of suitably prepared materials can be effective for the following functions:

- presentation of information,
- communication of objectives,
- structuring of the field,
- development of self-evaluation,
- development of ability to solve problems,
- development of specific skills.

The characteristics of "suitably prepared materials" for independent study were first systematically defined through the notion of programmed instruction.

The basic principles of programmed instruction are, for a given sequence of instruction or training:

- a clear specification of learning objectives, explicitly stated in advance in terms of observable behaviour.
- selection of learning material with clear reference to these objectives.

(1) This supplement is adapted from Section 3 of "Training and Techniques and Up-Grading Methods in the Field of Educational Planning, Administration and Facilities", Unesco, EPP, May 1980.

- organisation of learning material in short, progressive steps, in a logical sequence, and graded in difficulty to reduce the likelihood of student error.
- matching of introduction of new material to the students' entry behaviour (in terms of prior knowledge and experience of the subject).
- self-pacing of rate of learning by the student.
- active involvement by the student in the learning.
- continual feedback on progress during learning.
- mastery of one section by the student required before proceeding to the next.
- progressive refinement and improvement of the learning materials by controlled "piloting" of them on sample students during development.

The development of "classical" programmed instruction materials which actually follow all the above principles is a time-consuming, and hence costly, activity. Furthermore, there are certain areas of content and learning skills which are better suited to this treatment than others. Classical programmed instruction methods are most suited for content areas which:

- are relevant to a wide variety of contexts, or are more or less culture-free (to justify the effort needed to prepare the materials).
- have in the past proved to be difficult to get across, possibly because of lack of skilled trainers in the subject at local level, and/or because of the inherent complexity of the subject matter.
- deal with relatively quantifiable concepts which are susceptible to a logical dissection into short, progressive steps.

Obvious areas for the use of programmed instruction methods in terms of this project are:

- basic statistical methods and techniques,
- basic financial analysis and financial management techniques,
- programming methods and techniques.

Examples of a few frames (segments of instruction each incorporating a self-test question and feedback) from an existing classical programmed text are reproduced in Figure 4 to give an indication of one particular style of writing programmed texts.

Figure 4: An extract from a classical linear programmed text

QUESTION	YOUR ANSWER	CHECK
6. Although quantitative forecasts may also be prepared to support value forecasts, a budget is a detailed estimate of income and expenditure expressed in terms of _____ .		6. *money.*
7. Budgets are prepared for stated periods of time. Normally operating budgets are prepared for the next year. Should annual budgets be carefully prepared to achieve greatest accuracy?		7. *Yes.*
8. Medium term budgets, for about five years ahead, and long term budgets, for about ten years ahead, may also be prepared. What is more likely to be the purpose of medium and long term budgets? (*a*) to give detailed estimates of income and expenditure; (*b*) to give indications of likely trends of income and expenditure. (Select the correct answer)		8. (b) *to give indications, etc.*
9. What is the normal period of time for which operating budgets giving detailed estimates of income and expenditure are prepared?		9. *One year.*
10. An operating budget is normally a _____ _____ of income and expenditure for a period of one year expressed in terms of money.		10. *detailed estimate.*
11. What is an operating budget a detailed estimate of?		11. *Income and expenditure.*
12. In what terms is an operating budget expressed?		12. *In terms of money.*
13. Apart from annual budgets, less accurate indications of income and expenditure may be made for the _____ term, e.g. five years, and for the _____ term, e.g. ten years.		13. *medium; long.*

Source: HALSALL J.H. How To Prepare An Operating Budget, Longman International Centre for Advanced Technical and Vocational Training, Turin, Italy.

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Over the last ten years or so, the concept of programmed instruction has broadened considerably, extending beyond the classical format illustrated in the extract above. Many teaching texts can now be found which follow some of the basic principles listed on pages 21-22 above, but are far more flexible and open-ended in their structure and mode of utilisation, without reverting to the traditional style of a text book or training manual. They are self-instructional materials, which is a short hand way of saying that they:

- are written and presented in a stimulating style (e.g. a personal writing style, using the first-person singular),
- are easily "accessible" to the student - i.e. making good use of aids such as lists of learning objectives, concept maps, indices, glossaries, self-tests, clear section headings, recapitulations ; all of which make it easier to study the material under potentially difficult conditions,
- are clearly presented and structured, making optimal use of available typographical layout techniques, and leaving space for the student to make his own notes,
- provide opportunities for relevant activities to help the student interpret and use the knowledge and skills being expounded, and to check his mastery of them,
- possess, ideally, alternative routes and "by-passes" which allow for student differences in learning rate, in interest, and learning style (this can be done successfully in a limited way without resorting to the complexity of classical branching programmed texts).
- make minimal use of forward and backward referencing, or of references out to other materials, unless done in a carefully planned manner and with full recognition of the difficulties that this might cause for the student.

Examples of materials showing these features can be found in the excellent

self-instructional texts which make up the Basic Training Programme in Educational Planning and Management produced by the Unesco Office in Bangkok (referred to from now on as the "Bangkok Course"). Each of the lesson units is preceded by clear statements of learning objectives, is written in a stimulating style, and contains"student-active" self-assessment questions both in the text and at the end of each unit. Some even contain a simple "branching" structure, where trainees are directed to different comment/answer sections (yellow and green) at the end of the text, depending on the nature of their response to an in-text question. An example is shown in Figure 5.

Other training materials produced by Unesco/Bangkok make clever use of diagrams, charts and drawings to transmit basic information (See Fig. 6), from the Advanced Training Course in Designing Educational Buildings and Furniture). The manual for this course has the following lesson unit structure:

- the presentation of basic information through text and illustrations,
- a "test and apply your knowledge" section of questions based on the information presented,
- a recapitulation page,
- answers to the questions .

One of the key advantages of well-structured, self-instructional texts of this sort is that students can use them in a relatively flexible manner, depending on the variety and quality of access devices (objectives, contents, structuring, self-test items, etc.) provided. That is, they can effectively:

- be studied in short burst of time, or over more extended periods,
- be used to test one's existing knowledge, or one's progress in learning,
- be used for revision and reference purposes,
- be studied at one's own pace.

Figure 5 : Extract from a unit on management (Book VI, Unit 36.V)

17. Information means such materials as are specially selected and prepared for a particular problem, for a specified individual, at a special time and for the explicit purpose of achieving a definite goal. It is, sometimes, called selected data - selected with respect to problem, user, time, place and function.

CAN YOU DISTINGUISH BETWEEN DATA AND INFORMATION ?

YOU ARE AN EDUCATIONAL PLANNER. YOUR STATISTICIAN HAS RECEIVED STATISTICAL RETURNS FROM ALL THE SCHOOLS AND HAVE TABULATED THEM FOR PUBLICATION IN THE ANNUAL STATISTICAL BULLETIN. YOU ARE WORKING ON THE PROBLEM OF INTERNAL EFFICIENCY OF RURAL SCHOOLS. YOU ASK YOUR STATISTICIAN "HAVE YOU ANY INFORMATION ON THE SUBJECT ?" HE SAYS "YES" AND PUTS ON YOUR TABLE THE ANNUAL STATISTICAL BULLETIN AND 1,500 SCHOOL RETURNS.

DO YOU THINK HE HAS GIVEN YOU INFORMATION ?

Yes : see yellow frame 8.
No : see green frame 8.

Student turns to back of text

either : green frame 8

Proceed to page 7.

8. You are correct. Your statistician has not given you information on the subject; he has only given data. This is a major problem in management. There is no dearth of data. But information - good, reliable information - is very rare. To generate information, the manager must take special steps. - Proceed to page 8.

9. You are wrong. The two types of reports do not fall into

or : yellow frame 8

and (d). Then proceed to Green frame 7.

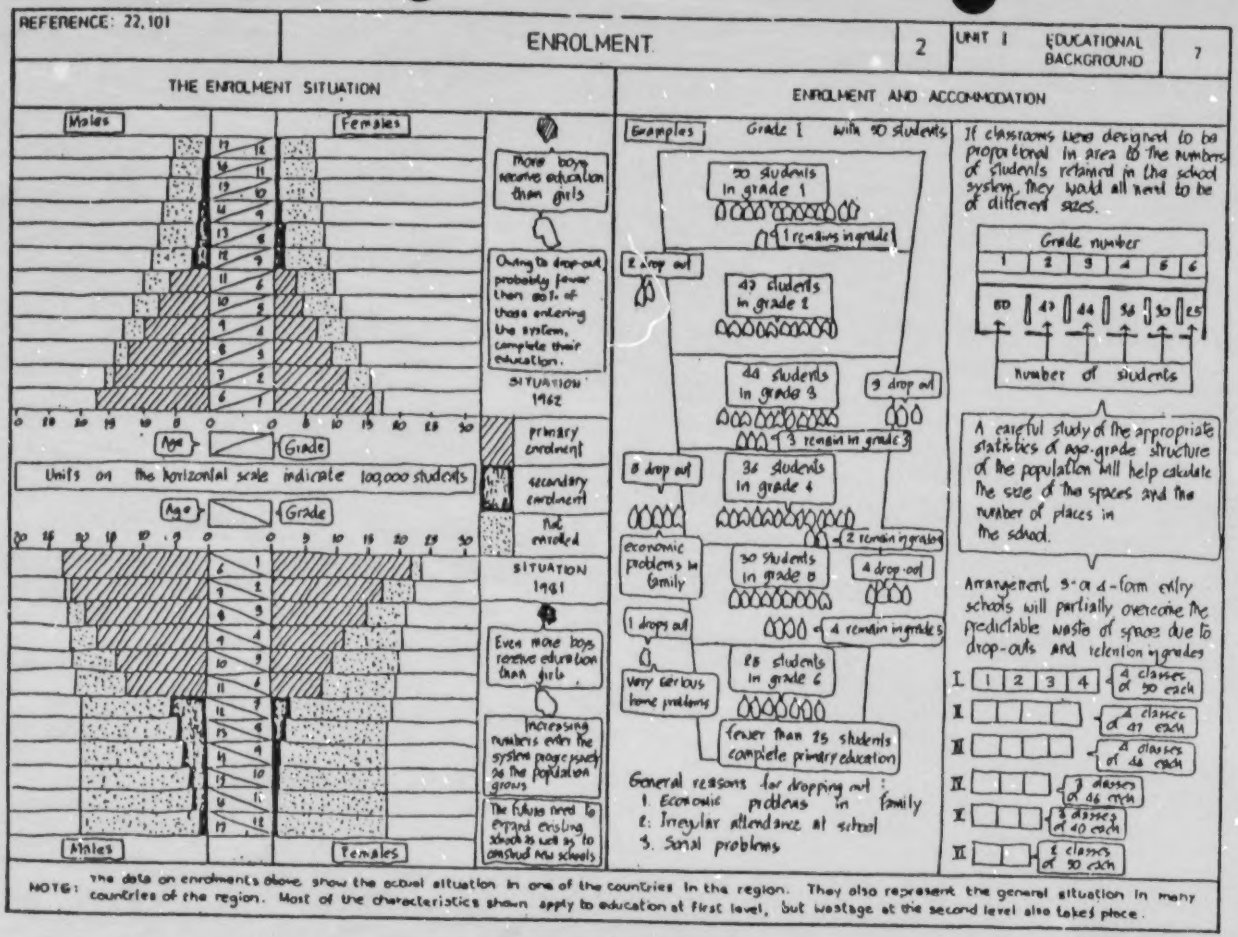
8. You are wrong. Information is selected data. What your statistician has done instead is to give you a whole heap of data he has in his hands. He certainly has no information on the subject. Read page 7 again - Proceed to Green frame 8.

9. Yes. You are right. Proceed to page 9.

Student then returns to next page of main text

Source : GURUGE A basic Training Programme in Educational Planning and Management, Unesco, Bangkok.

Figure 6 : Extract from a unit on facilities design (Unit 1, p. 7)


REFERENCE: 22,101
ENROLMENT
2
UNIT 1 EDUCATIONAL BACKGROUND
7
THE ENROLMENT SITUATION
Males
Females
Age
Grade
Units on the horizontal scale indicate 100,000 students
SITUATION 1962
SITUATION 1981
primary enrolment
secondary enrolment
not enrolled
More boys receive education than girls
Owing to drop-out probably fewer than 50% of those entering the system, complete their education.
Even more boys receive education than girls
Increasing numbers enter the system proportionally as the population grows
The future need to expand existing schools as well as to construct new schools
ENROLMENT AND ACCOMMODATION
Examples
Grade 1 with 90 students
90 students in grade 1
1 remains in grade 1
2 drop out
42 students in grade 2
44 students in grade 3
9 drop out
3 remain in grade 3
8 drop out
36 students in grade 4
2 remain in grade 4
economic problems in family
30 students in grade 5
4 drop out
4 remain in grade 5
1 drops out
very serious home problems
25 students in grade 6
fewer than 25 students complete primary education
General reasons for dropping out :
1. Economic problems in family
2. Irregular attendance at school
3. Social problems
If classrooms were designed to be proportional in area to the numbers of students retained in the school system, they would all need to be of different sizes.
Grade number
1 2 3 4 5 6
90 42 44 36 30 25
number of students
A careful study of the appropriate statistics of age-grade structure of the population will help calculate the size of the spaces and the number of places in the school.
Arrangement 3- or 4-form entry schools will partially overcome the predictable waste of space due to drop-outs and retention in grades
I 1 2 3 4 4 classes of 50 each
I 2 classes of 42 each
II 2 classes of 44 each
IV 3 classes of 36 each
I 3 classes of 40 each
II 2 classes of 30 each
NOTE: The data on enrolments above show the actual situation in one of the countries in the region. They also represent the general situation in many countries of the region. Most of the characteristics shown apply to education at first level, but wastage at the second level also takes place.

Source : HAMEL J.P., Educational Facilities Design, Unit 1, p.7 from Advanced Training Course in Designing Educational Buildings and Furniture, Unesco, Bangkok.

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However, a major disadvantage of exclusive reliance on independent study from materials such as these is the lack of contact with peers and skilled resource/training personnel, as well as the potential boredom that might be occasioned by a single-medium (print only) channel of information. Use of independent study materials within a support framework is one way of reducing these difficulties.

2. Supported Independent Learning (Distance Learning)

Distance learning methods provide enrolment, registration, support and assessment functions to (usually adult) students who are learning independently. They tend to serve relatively dispersed student populations and involve a minimal reliance on, or a change in the role of, face-to-face teaching.

The scale of distance learning projects may vary from the massive and relatively monolithic (e.g. the British Open University) to the small and flexible (e.g. the correspondence study version of the Bangkok Course).

The latter involved participants in submitting a written assignment after study of each lesson unit to a correspondence tutor in the Unesco Regional Office. Assignments are returned with comments, and selected participants are then invited to attend one or more face-to-face workshops in the Bangkok Office, and short field assignments in selected countries.

Figure 7 reproduces the instructions for the use of the Bangkok materials, indicating how the self-study method can be used in conjunction with correspondence tuition.

Figure 7 : Guidance Notes for Trainees (from Book VII : Principles and Problems of Educational Management) Unesco, Bangkok, 1978

HOW TO USE

The lesson units may be used in two ways :

(i) In a self-study programme, either at the learner's own initiative or as a prescribed task by an appropriate authority.

Here the learner may follow the sequence of lessons in the seven books or select only those in which he is interested. He will also choose his own pace of study unless otherwise required.

(ii) In a correspondence tuition programme wherein all or a selected lessons would be prescribed by the agency conducting the programme for self-study.

Here, the learner would adhere to a time-table for the despatch of set written work to the agency concerned.

SELF-STUDY

In either case the basic principle of the training programme is self-learning. The lesson units present selected facts and data relating to each subject, provide guidance in relating them to one's own experience and raise issues to generate analysis and investigation. The following steps are suggested :

Step I - Read the lesson unit at a stretch to get an overall idea of the subject covered by it.

Step II - Study the statement of objectives at the beginning of the lesson, asking one's self such questions as "Do I know it ?" or "Can I do it ?".

Step III - Undertake a detailed study of the lesson unit, taking a section at a time. (A lesson unit is divided into several, usually 5-7 self-contained sections. Each section would entail 20-30 minutes of study). In such a detailed study, special attention should be devoted to examples (both real and simulated) which are used to explain a particular point. Learner should analyse his own national experiences by asking such questions as the following :

Figure 7 (Cont.)

"Does this example apply to my country ?" "What exceptions could I think of and what causes such exceptions ?" "Is the point supported by the example valid in respect to my country?" "What evidence in support or against the point could I provide from my experience ?".

Step IV - Attempt answering the self-evaluation questionnaire at the end of the lesson either orally or in writing. The latter is preferred unless the learner has problems with time. In either case, the relevant sections of the lesson may be referred to.

Step V - Compare the answers with those given.

Step VI - Organize a programme of in-depth study with the aid of the recommended readings.

ASSIGNMENTS

Where the lesson units are used in a correspondence programme, each book would be accompanied by a set of assignments to be completed according to instructions and returned to the agency conducting the course.

Educational Planning & Management Service
Unesco Regional Office for Education in Asia

Bangkok
Thailand
September 1977

In respect of this project, there would seem to be a number of different potential ways of using distance learning methods, depending on the nature and locus of the centralised enrolment, support and monitoring functions. Firstly, these functions could be provided on a regional basis to trainees in a number of neighbouring countries through a Unesco Regional Office or some comparable regional institution. This is, of course, the model so successfully adopted for the Bangkok Course. It has the advantages of efficiency in providing, through one centre, facilities for greater numbers of trainees at once than would be possible at national level, and of variety and contrast for trainees in being able to compare problems and solutions within a range of different countries.

Secondly, it would be possible to use an existing national distance learning institution to provide the centralised functions for trainees at a national level (i.e. to add a course in educational planning, administration and facilities to its existing course profile).

This is what the Allama Iqbal Open University (AIOU) has done in Pakistan with a modified revision of the Bangkok Course (see extract from the AIOU courses handbook, reproduced in Figure 8). Another example would be the distance learning courses in educational administration for overseas students provided by the Western Australian Institute of Technology (WAIT).

Thirdly, it would be possible for an existing Government department responsible for the recruitment and training of educational planners and administrators to run a straightforward correspondence study programme in the field, using local and centrally provided materials for independent study, and a combination of face-to-face meetings, workshops, and correspondence tuition for guidance and feedback.

Figure 8 : Details of AIOU MA Course in Educational Planning and Management
Allama Iqbal Open University, Islamabad, Pakistan.

M.A. level course in Educational Planning and Management.

The course in Educational Planning and Management caters for the training of Educational Planners of which there is an acute shortage in Pakistan. It is offered in collaboration with UNESCO (Regional Office for East Asia) Bangkok. The course is centred on the specific problems and needs of educational planning and management, and is designed to develop and improve knowledge and skills in the application of educational planning and management techniques to problems encountered in Pakistan. The main objectives of the course are :

1. to familiarize participants with theories, techniques and issues in educational planning and management.
2. to equip the participants with the skills and knowledge necessary to introduce innovations in education, and
3. to enable the participants to take up the training of educational planners at the regional level.

Duration and Method

The course comprises a six-month correspondence phase and a one-month workshop at the University. campus. The correspondence text is the same as used by UNESCO for their group training course and is supplemented by educational planning materials relating to Pakistan.

Participation

The course is meant for in-service planners nominated by the Federal and Provincial Ministries of Education, Planning Division, Universities and Institute of Education and Research.

Cost

Correspondence material is supplied free of cost. The total fee of Rs.180/- includes registration, tuition and examination. Actual cost per student comes to about Rs.1000/- (the cost of the same course, conducted at Bangkok is about Rs.25,000/- per student).

Evaluation and Certification

On successful completion of the course a candidate qualifies for the award of a Master level course certificate (equivalent to 1/8 of the total requirements of M.A. degree).

3. Group Learning Methods

We have already assigned to group study methods the role of aids to independent study. The following functions are particularly appropriate for group methods : explanation of difficult concepts and problems, motivation, development of critical thinking and problem solving abilities and technical skills, development of alternative frames of reference, attitude change, and encouragement of initiative. As with independent learning, group methods should be based on active involvement by trainees in their learning.

3.1 Self-help (or leader-less) groups

These are groups of students or trainees who meet together, in the absence of trainers or resource personnel to :

- solve a problem, or work on a particular task, assigned to the group as part of a formal training programme,
- help each other, and learn from each other, within a more informal framework, as part of a programme of independent study.

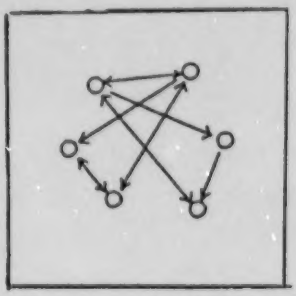
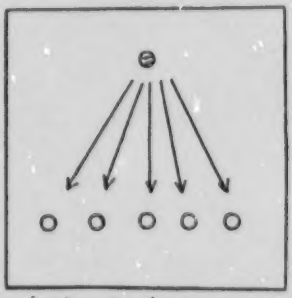


Figure 9 : A Self-Help Group

Group activities of this kind should be actively promoted as a means of encouraging members of the target population to help each other to develop their skills as independent learners.

3.2 Lectures and talks

Conventional lectures or talks, by an instructor or by experienced practitioners (resource personnel)probably have only a limited direct instructional role to play in the context of this project. Firstly, there is



[● *instructor/resource staff*]
[○ *trainees*]

Figure 10 : A Lecture/Talk

little evidence that such methods are especially efficient at transmitting information, and - except in the case of really exceptional speakers - the attention span of the recipients is likely to be limited to 15-20 minutes of continuous monologue. The method discourages active involvement by the participants, either with the speaker, or amongst themselves, and thus reduces the chances of any significant learning occurring. With small groups (12-20 participants) it is obviously possible for some degree of dialogue to evolve, for questions to be raised and answered, and for group discussion to develop. But this then becomes a different method (see 3.3 below).

There are perhaps three situations where the lecture method could be justified:

(i) for providing conceptual or organising frameworks to trainees as an introduction to a particular topic, prior to independent study or other, more interactive, group modes

(ii) in the training situation, for providing basic information which for various reasons, cannot be easily incorporated in independent study materials :
- presentation and description of "realia" such as architectural models of school buildings,
- presentation of relevant, important and up-to-date local data on say, projected school enrolments, or budgetary forecasts, by a local practitioner or decision maker.

(iii) outside the formal training situation, as an adjunct to case-study visits (for example, to school buildings, to study design features in practice, or to a central planning office to see how, in fact, school mapping data is used and interpreted).

The last two situations are important if training is to be adapted to local needs and circumstances, and if key local practitioners and resource personnel are to be involved. Such people will have little or no time to prepare independent study materials or more complex interactive group sessions, but may well be happy to give talks about their work, in their working situations.

3.3 Discussion Methods

Purposeful and useful discussion sessions during a training course need to be carefully planned, with a leader who is well prepared. The latter needs to be able to balance :

- his or her own style of leadership
- ways of dealing with potentially difficult participants (e.g. those who say nothing, those who say too much)
- the content of the discussion
- the interactions amongst group members
- changes in mind that may occur during the sessions.

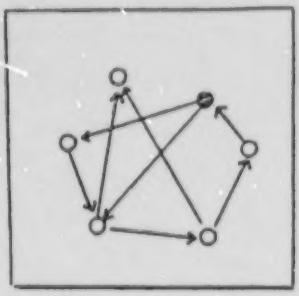


Figure 11 : A Discussion Group

The interactions within a group should be similar to those shown in Figure 11 : this requires a leader who deflects problems and questions back into the group, and does not allow the situations to develop into a question and answer session.

Effectively managed group discussions can be of great importance for :

(i) raising levels of motivation

(ii) helping to develop attitude and opinion changes amongst participants

(iii) sharing knowledge and skills amongst group members.

For the third type of function above to be effective, it is necessary for participants to have a common knowledge base from which to work. A discussion of say, specific applications of a particular planning or budgetary technique which had been studied independently beforehand would be an example. Participants could each be asked to list their views on the pros and cons of the technique in their own individual situation, circulate the lists amongst each other, and then launch into a purposeful discussion based on a prior understanding of the others' points of view.

One technique which is often useful at the beginning of discussion sessions, especially when participants have only recently met each other, is to carry out some listening exercises. This involves splitting participants into pairs, and asking participant "a" to explain his views on a specific topic for, say, three minutes, to his partner "b". "b" is then required to repeat "a's" views back to him until "a" is satisfied that he has been correctly understood. Only then may "b" comment on "a's" views. Numerous variants of this exercise exist, and can be invaluable in preparing people to really listen to each other before going into a discussion session.

Any discussion session should terminate satisfactorily, with agreed sets of conclusions or decisions. In some situations, it may even be appropriate to have one group member act as a rapporteur, taking notes during the session which can contribute to such conclusions.

3.4 Tutorials and question and answer sessions

Tutorial sessions, preferably in small groups, are valuable as a follow-up to a period of independent study, or to another group method.

For maximum benefit, such sessions

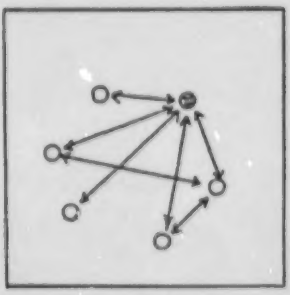


Figure 12 : A Tutorial

should be clearly distinguishable by the trainees from the other group methods, and should relate to a specific prior experience or topic. Points to be covered include:

- that the participants or trainees know in advance what topic(s) are to be covered and come prepared with questions and points of difficulty
- that seating arrangements ensure good eye contact amongst all participants
- that the leader/trainer does not become side-tracked on issues of minor importance that interest only one or two participants
- that all participants have a chance to take part, and that no-one is left at the end of the session with unanswered questions.

3.5 Workshop activites

Workshop activites may be carried out cooperatively, in small groups, or individually, with a skilled practitioner or trainer present as a resource person. The objective of such activities is to practice and develop a specific, often technical, skill, under expert supervision (ie. "learning by doing"). Such activities require careful preparation and structuring, as well as relevant source and guidance material from trainees, trainers and resource personnel.

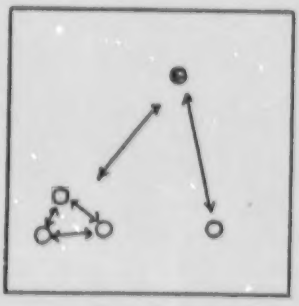


Figure 13: A Workshop

Relevant examples might include:

- exercises on designing school furniture
- various statistical analyses of given data (financial or demographic)
- developing planning networks for implementing a new educational project.

Individual and group results should be pooled and discussed at the end of a session.

3.6 Simulations of reality

Group exercises and activities which simulate real-life situations representing those which trainees or participants will encounter in their professional jobs are of a wide variety of types, but can be categorised into three main groupings :

(i) Laboratory training : mainly used in the field of educational administration for helping to develop human relations skills, through techniques such as psychodramas, T-groups, and other forms of sensitivity training, and role-playing. In the last instance, for example, group members may be asked to take on the role of parent, headmaster, inspector, finance officer and so on, and explore each others' reaction to a particular realistic problem with which they are presented. In the process, they can be guided in analysing the dynamics of the group, and the ways in which individual members interact.

(ii) Case methods and simulations : group members may be asked, individually, to say how they would respond to a particular case-study situation or incident presented to them (either verbally, or via print or audio-visual media) and to justify the decisions they might take were they to find themselves in such a situation. Subsequent discussion amongst group members can illuminate differing viewpoints on the issues raised, and, so it is argued, help in development of decision-making skills. "In-basket" exercises, in which individual group members are asked to take decisions, over a short period of time, on how they would deal with each item in a typical administrator's in-tray, are widely used.

Before the start of the exercise, relevant background material is provided (verbally in print, or via a film or set of slides) ; and at the end of the exercise, the participant can be invited to justify his decisions to other group members who have gone through the same or similar exercise.

"The appeal of in-baskets is their sense of "here and now". Problems culled, usually, from real life situations, demand action - or, sometimes, lack of action - in a limited time span. Decision making can be rendered all the more difficult by placing severe time limits on the administrator, by depriving him of the services of his secretary (which, for most administrators, also means depriving him of his files!) and by introducing telephoned or personal interruptions from time to time during the period allocated for reaching decisions." 1/

An extract from the Role Background Instructions for a typical in-basket exercise is reproduced in Figure 14.

(iii) Simulation games : this third category of real-life exercises involves participants competing (individually or in teams) according to set rules and scoring procedures. The game materials include relevant background information on the simulated situation or context, together with criteria against which solutions can be judged. Games usually require fairly considerable amounts of time, both in preparation and execution, as well as flexible room arrangements (e.g. for competing teams to withdraw to). Extremely complex games can be devised which require treatment and analysis of

1/ WALKER W.G. (ed) : Schools of Mapleton/Mapleton Elementary/In-basket 1 University of Queensland, Australia, 1969.

Figure 14 : Role Background instructions to an in-basket exercise

BACKGROUND TO ROLE

For this exercise you will assume the role of Mr. S. H. Fletcher, Principal of Mapleton Elementary School. A non-teaching principal, you have a staff of twenty full-time teachers, and one part-time sewing instructress. The school has an enrolment of 721 children in grades one to six.

You have just attended a two day zone conference (March 20-21) together with a number of other senior educationists in the district. Your senior assistant, Peter Watson, has been Acting Principal in your absence, and has taken the usual messages, phone calls, etc. On Wednesday morning you return to school to find that two of your teachers are away with influenza and are not expected back until the following Monday. Under these circumstances you are obliged to teach for the rest of the week, and all your routine administrative work must be done during lunch hours and in the period after school each day.

It is now 12.30 p.m. and you go to your office to deal with the following items which have accumulated while you were away. As you work through these items you should specify carefully the decisions that you make. Three types of response are required:

1. Action. Under this heading you should set out in detail every action you would take. If responding by telephone, letter, memo, etc. indicate in note form what you would say.

2. Comments. Here you may record reasons for your action, and any additional remarks you wish to make.

3. Priority. You should also assign a priority by circling the appropriate number on the right hand section of the sheet. These priorities should be assigned on the following basis:

1. Item must be handled immediately, during the next 45 to 60 minutes.

2. Item should be handled later to-day.

3. Item should be handled by the end of the week.

4. Item should be handled by the end of the month.

5. Item may be deferred indefinitely or discarded altogether.

Set out below is a calendar for the month of March, and on the following page is a map showing Mapleton and the surrounding district. A sample item then follows.

Source : WALKER W.G. (ed) : Schools of Mapleton/Mapleton Elementary/ In-basket 1, University of Queensland, Australia, 1969.

quantitative data (e.g. financial, demographic, text scores) and access to data-processing facilities.

A number of general comments can be made about all three categories of reality-oriented group methods. Proponents of these methods (see Wynn, 1972) would claim that they :

- stimulate motivation, interest and other affective factors,
- permit a depth of introspection rarely provided by other methods,
- allow the learning to profit from mistakes and to perceive the consequences of his actions more clearly.

However, use of these methods does pose special problems. Firstly, there is the question of the fidelity and relevance of the simulation - a particularly serious problem for this project. Centrally produced materials would have to be ficticious - based on contextual features drawn from a whole range of LDC situations, or specific to one real country. In both cases, the materials may be rejected as being irrelevant by many of the potential participants. Secondly, there is the matter of transferability - there is little scientific evidence yet to show that skills (e.g. interpersonal and decision-making skills) developed in simulations transfer to real-life situations. There are also a number of logistical problems inherent in using these methods. In in-basket exercises and simulation games, for example, timing can be a much more critical factor than for other group methods, or for independent study, and may need to be vigorously controlled. Skilled staff need to be at hand to control and supervise simulations, and complex equipment and space requirements may be involved. And preparation and development of simulation materials can be extremely time-consuming.

Finally, unless sensitively handled, these methods can at times cause distress and embarrassment to participants. In a game, there has to be a loser and a winner. In role-playing exercises, or sessions on

group dynamics, individuals may reveal aspects of their personality which they would have preferred to keep concealed. Furthermore, it is not readily apparent what influences cultural factors may have on the use and acceptability of such methods. Most of these techniques have developed in a very Western context (psycho-analytic theory and achievement-oriented inter-personal competition are two evident influences). The transferability of these methods to totally different cultural contexts should be examined before any effort is invested in materials preparation.

4. Combinations of group methods and independent study

The training activities envisaged as occurring in association with the materials which will originate from this project will, in any given local situation, include varying combinations of independent and group study methods. In some cases, a particular sequence of combinations may be organised as a formal course, with assessment, required work, and some form of certification. In other cases, arrangements will be more flexible, and less formally organised. The particular combination of group methods and independent study adopted for the Unesco/Bangkok Group Training Course has been particularly successful : it is summarised below.

"Combining distance teaching techniques with contrast sessions and practical field exercises, each course consists of four phases :

Phase I (4-5 months) - Instruction by correspondence in which the participants engage in self-study using the Basic Correspondence Training Programme materials in educational planning and management, developed by EPMS, and attempt written assignments to be returned to EPMS.

Phase II (4-5 weeks) - Training Workshop and Practical Exercise, involving tutorial groups, seminar discussions, practical field exercises, and laboratory assignments in small groups.

Phase III (1-2 weeks) - Study and Observation of Educational Planning and Management in Operation through visits to selected national institutions responsible for educational planning, plan implementation and evaluation, to observe different aspects of educational planning at work and have discussions with responsible officials.

Phase IV (8 months) - Instructional Follow-up, in which the participants on return to their home countries resume self-study on subjects and problems identified by them during the training period, the correspondence lessons for which they are provided by EPMS. "1/

1/from Report on Fifth Group Training Course in Educational Planning and Management 1978-79, Unesco, Bangkok, 1979.

Obviously, this is just one example of many possible different combinations. For the purposes of this project, it will be necessary to carefully analyse the specific situations in which the modular training materials are going to be used, and then devise the most suitable combination of methods for each set of circumstances, having regard to local needs, resources, and constraints.

The matrix in Figure 15 below attempts to specify the range of possible combinations available. Group methods (rows A-D) are classified in four categories :

- none (A)
- self-help groups, as described at 3.1 above (B)
- directed group study, as described a 3.2 - 3,6 above (C)
- case study and field visits to actual projects (D).

Independent study methods (columns 1 - 5) are categorised according to the absence or presence of support (enrolment, correspondence tuition, assessment) and the focus of the support :

- no independent study at all (1)
- unsupported independent study (2)
- supported independent study on a regional basis (3)
- supported independent study through a national distance learning institution (4)
- supported independent study through a national Government or Ministry (5)

On this matrix, the Bangkok Group Training Course would be characterised by cells 3C and 3D ; the Allama Iqbal Open University distance learning course by cells 4C and 4D, and the conventional *stage* or workshop course by cell 1C.

Use the blank matrix in Figure 15 as a guide to help you structure the training programme which you are involved in planning.

Figure 15 : Options for Combination of Independent Study and Group Methods

INDEPENDENT STUDY / GROUP METHODS	(1) None	(2) Unsupported Independent Study	Supported Independent Study		
			(3) Regional basis	(4) through a national distance learning Institution	(5) through a national Department/ Ministry
A None					
B Self-help groups					
C Directed Group Study					
D Case-study and field visits					

TRAINING MATERIALS IN EDUCATIONAL PLANNING, ADMINISTRATION, AND FACILITIES

A SELF-INSTRUCTIONAL GUIDE TO AUTHORS AND USERS OF SELF-STUDY MATERIALS

MODULE II : PLANNING, WRITING AND TESTING SELF-STUDY MATERIALS

Section 1 : Planning Your Module

Section 2 : Starting to Write

Section 3 : Structuring and Presenting Your Module

Section 4 : Trying Out Your Module

Supplement 1 : Writing Performance Objectives

Supplement 2 : Calculating Readability Scores

Division of Educational
Policy and Planning

U N E S C O

A SELF-INSTRUCTIONAL GUIDE TO

AUTHORS AND USERS OF SELF-STUDY MATERIALS

This Series is made up of the following components:

- Introduction and Study Guide
- Module I : PREPARING SELF-STUDY PROGRAMMES
- Module II : PLANNING WRITING AND TESTING SELF-STUDY MATERIALS
- Module III : EVALUATING AND ADAPTING OTHERS' MATERIALS
- Module IV : DEVELOPING GUIDELINES FOR USERS

MODULE II : PLANNING, WRITING, AND TESTING SELF-STUDY MATERIALS

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MODULE II : PLANNING, WRITING AND TESTING SELF-STUDY MATERIALS

OVERVIEW

This Module forms the core of Series O. In the course of working through it you will plan, write, try-out, and re-draft a complete module in the specialist field which you have chosen. These activities correspond to steps 10 and 11 ('materials preparation' and 'try-out and revise as necessary') in Figure 2 of Module 1.

Module II contains the following components:

- section 1, on planning your module
- section 2, on starting to write
- section 3, on structure and presentation
- section 4, on trying out your module
- supplement 1, on writing performance objectives (this is linked to section 1)
- supplement 2, on calculating readability scores (linked to section 2)

OBJECTIVES

After working through this Module, you should be able to:

1 Identify the main steps involved in writing a self-instructional modular text

2 Apply your knowledge of these steps by preparing a draft module in your own specialist subject area, including:

- specifying the main learning objectives to be acheived, in operational or behavioural terms
- specifying the principal learning activities needed to acheive these objectives
- designing test materials to assess the extent to which trainees have acheived the objectives
- trying out and revising in the light of feed-back from a sample group of trainees, the training materials which you have prepared.

3 In general, develop and improve your skills in writing self-instructional training materials.

SECTION 1 : PLANNING YOUR MODULE

Summary: This section is specifically concerned with helping you to plan your module by:

- selecting and mapping out a discrete content area for your module, based on one of the overall aims which you have already identified.
- writing objectives, exercises, activities and self-assessment materials for your module.
- deciding on the sequence of presentation to adopt.

Supplement 2, which is about writing performance objectives, is linked to this section, and you should read it at the point suggested in the module text.

Selecting the Theme of your Module

Refer back to the general aims which you drafted for your overall training programme in section 2 of Module 1.

Examine these aims again and identify those which you believe can most suitably be taught in a self-instructional mode, that is, the aims which you wish to cover in your modular material.

The sort of aims that can most effectively be taught using self-instructional materials are those associated with, for example, the learning of factual information, the application of such information to specific situations and problems, and the development of skills (calculation, problem solving etc.)

Group and face-to-face training methods, on the other hand, are often best used for motivation, development or changing of attitudes, and providing help with learning problems (e.g. explanation of difficult concepts, discussion of trainees' work, and so on).

You should check that you have been able to distinguish, amongst your list of general aims, those which are most suited for self-study, and those which might be covered in a group or face-to-face situation.

As an example, Panel 4 below repeats the aims listed in Panel 2, identifying those which I think are suitable for modular instruction, and those which need a group, workshop environment.

Panel 4 : Training Methods for Aims of a Programme in Quantitative and Financial Aspects of Educational Planning

A. *Aims to be covered by Modular Training :*

(ii) to provide basic knowledge and skills in financial and quantitative analysis, diagnosis, and projection, related to school enrolments, and personnel and facilities needs

(iii) to apply this knowledge and these skills to specific, defined situations

B. *Aims to be covered by Workshop Training and Group Meetings*

(i) to convince the staff involved of their need for training and up grading, and to motivate them to undertake training (meeting or workshop at beginning of programme)

(iv) to develop team skills amongst trainees with different responsibilities and specialisms in tackling actual problems (workshop and simulation exercise at end of programme)

Now that you have identified the overall aims for the modular instruction part of your overall training programme, the next step is to define the main thematic areas which need to be covered to meet these aims. You should consider to what extent a separate module will be needed for each of these thematic areas. One of the key elements of the definition of a module is that it deals with 'a discrete conceptual unit of subject matter .... (which attempts) to individualise instruction, thus enabling the student to master one unit before moving to another' (1)

(1) Russel J.D. Modular Instruction Burgess Publishing Company, Minneapolis, 1974

Refer back to your modular instruction aims, amd make a list of the main thematic areas (or conceptual units of subject matter) which need to be covered to meet these aims.

- When you have done this, select one thematic area (or conceptual unit of subject matter) with which you are familiar, and about which you want to write. This will be the subject matter of the module you are going to write : it should represent about 2-4 hours of study time by the eventual trainees.

In Panel 5 below you will find a list of themes based on the modular aims from Panel 4, with the theme which I am going to use as an example for the rest of this section picked out.

Panel 5 : Example thematic areas based on the Modular Aims for a Programme on Quantitative and Financial Aspects of Educational Planning

1. *Diagnostic techniques : Student flows*
2. *Diagnostic techniques : financial analysis*
3. *Diagnostic techniques : personnel and facilities*
4. *Projection techniques for enrolments*
5. *Projection techniques for personnel needs*
6. *Projection techniques for facilities needs*
7. *Projection techniques : costs and resources*

Each of the above theme areas could form the basis of a self-instructional module of 2-4 hours study time. I shall choose No. 3 ('Diagnostic techniques : personnel and facilities') for subsequent panel examples.

Identifying the Scope of Your Module

Now you have to decide what your module will contain. You can ask yourself a number of questions which will help you approach this problem from different angles:

(1) What content in terms of both knowledge and skills needs to be included?

(2) What activities and exercises could trainees carry out to help them in their learning

(3) What do I expect trainees to be able to do after studying the module that they couldn't do before (i.e. what are the module's objectives?)

(4) What questions can I ask, or what tests can I set, to allow me to discover whether the trainees have understood the material in the module (assessment)?

(5) what is the best sequence of activities and materials in the module, for my trainees?

The first of these questions (content) defines the basic material for the module, the next three (activities, objectives, assessment) describe what the trainee will do with this material to achieve the aims specified for the module, and the final question (sequence) defines the order in which this will be done.

In practice, it is probably best to try to consider all these questions together when planning your module, because they are so closely inter-related, and answers to one question will help you clarify answers to the others. So one technique you might wish to adopt is to take a large sheet of paper and write down notes in say, columns, under each of these five headings, thus progressively building up an overall picture of the module.

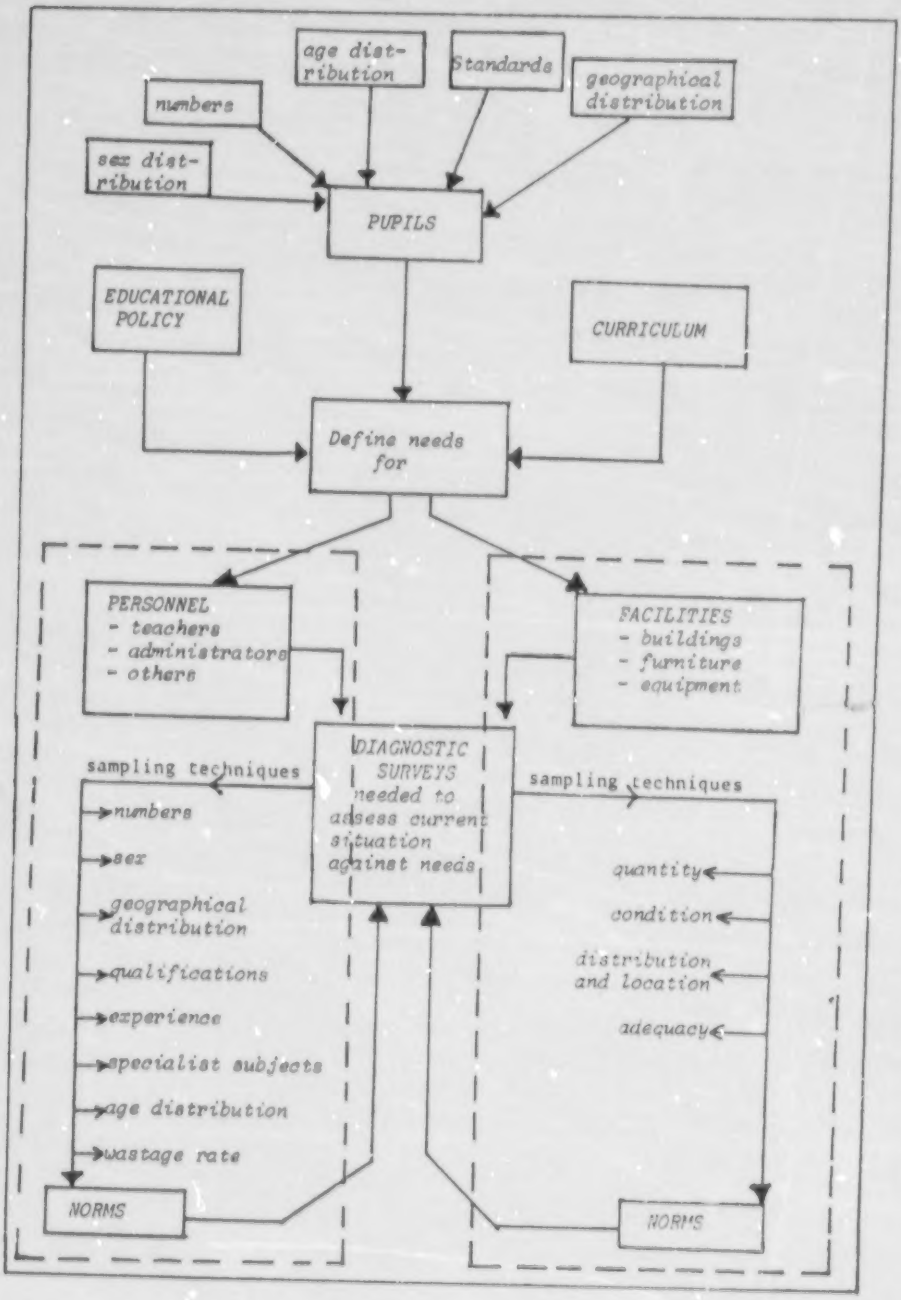
However, we shall need to look at each of these questions in turn first of all.

Content

There are a number of simple techniques which you might like to use for mapping out the content of your module. The most obvious is to make a systematic list of content headings - based on your own specialist knowledge, and/or on the contents and index pages of standard works on your topic, arranged in a logical sequence. A second method is to 'brainstorm' a list of headings - preferably with two or three other people who are experts in the topic you wish to teach. This involves writing down ideas as they come into your head, or as you discuss the topic with your colleagues, in the order in which they come up. This method is likely to produce a much longer list than the first, but you can then select out the relevant concepts and discard those that are peripheral.

A disadvantage of both these methods is that they do not necessarily indicate links and connections between different concepts and topics. So a third technique, which can use as its 'raw data' the results of a structured content list, or an unstructured 'brainstormed' list, is to try and draw up a concept or topic map of the content of your module. To do this, take a large sheet of paper and arrange the topics and concepts in clusters, with lines drawn between them to indicate relationships - deductions, similarities, logical links. Or you might prefer to write each major topic or concept cluster down on a small piece of card, then move them around until you have them arranged in a 'map' which is meaningful to you. You will find this useful at a later stage in planning - when you have to decide on the sequence in which you are going to order the material in your module. In Panel 6 below, as an illustration, you will find a draft concept map covering the thematic area : 'Diagnostic techniques : Personnel and facilities'.

Panel 6: A Concept Map on Diagnostic Techniques for Personnel and Facilities



Try now to produce a content list and concept map for your own module, based on the module theme(s) which you've already chosen.

When you've done this, go back over your content list and concept map, and identify those terms and ideas which you think will be new to the trainees, and distinguish them from those with which you think they will already be familiar. You will need this information at a later stage when you start actual writing, and need to know what prior knowledge can be assumed.

Objectives, Activities and Exercises, Assessment

Lists and maps of items of content (as in a 'syllabus') are a necessary but insufficient input to planning any course of instruction. Their major drawback is that they specify neither the depth (or breadth or level) of treatment of each item, nor what is expected of the trainee in relation to any given item. Take, for example, the content item 'sampling techniques' drawn from my concept map in Panel 6 above. What exactly is the trainee supposed to be able to do after learning about this item:

- ask a statistician to prepare a sample for him?
- choose an appropriate technique from amongst a given set?
- design a new technique?
- carry out the sampling himself, and analyse the results?

The content item alone does not provide an answer to this question. However, a statement about this item expressed as a performance objective, and exemplified by a related activity and/or test item, can answer it. Such a statement will also indicate the purpose for which the content item is required to be learnt; this will automatically make learning more relevant and meaningful to the trainees; and activities and test items derived from an objective will specify the criteria which will be taken to indicate successful attainment of the objectives by the trainee. At the beginning of each of these modules, you will find a statement of objectives for the material which you are studying. This is meant to give you a fairly clear idea of what you might have acheived after studying each module. And you should be able to identify activities which you have carried out which are derived from, and exemplify, these objectives. For example, derived from part of the second objective in Module 1 ('defining the main relevant characteristics of the target population') was an activity which you carried out at the end of Section 1 of the first module, when you drew up a profile of your own trainees.

When I was planning this module, I made out a list of objectives and related activities for you to carry out, to apply and test what you were learning. I based my list of objectives on what I saw as the main aims for the module; this, in turn, was based on what I had been told were your main needs as users.

Refer back now to your content outline for the module which you are planning to write, and try to draw up a list of specific performance objectives based on these aims and the content lists. You will find in Supplement 1 to this Module a brief discussion of the characteristics of performance or behavioural objectives, which you should find helpful in doing

this. Read this supplement first of all.

In Panel 7 below you will find an example of objectives for a module on 'Diagnostic techniques : personnel and facilities'.

Panel 7 : A Partial List of Example Objectives for a module on Diagnostic Techniques : Personnel and Facilities

When you have completed this Module you should be able to:

(i) recall from memory and list the types of data needed to provide an overview of the stock of existing personnel and facilities, from both a qualitative and quantitative viewpoint.

(ii) from a given educational context - for example that of your own country - diagnose the situation concerning each major category of educational personnel, in terms of:

- *pupil-teacher ratios*
- *geographical distribution of teachers*
- *levels of qualification and training*
- *necessary content specialisms*
- *teacher:support staff ratios*

(iii) for a given defined context, design a sample survey which will provide the necessary data for a diagnosis of the status of physical facilities.

Note that in the examples above, I have used words such as 'recall', 'list','define', 'design', because these words (and others such as 'compare', 'solve', 'recognise' etc.) give a fairly precise meaning to the objective. They define a performance in a way that vaguer terms such as 'know' or 'understand' don't. As such, they enable the learner to interpret the content items in a meaningful and purposeful manner. The second thing which you can do at this planning stage of writing your module, as we mentioned above, is to draw up a list of key activities and exercises for trainees toundertake when studying the module, based on your learning objectives. These might range from solving a problem presented in the text, or doing an exercise, to visiting a school or even carrying out a survey. The purposes of structuring your module around key activities are, of course:

- to involve the trainee actively in what he is learning : there is plenty of evidence to show that such involvement enhances learning rates
- to give the trainee practice in applying the knowledge he is learning to problems and real life situations.

Never forget that the activities in your module will be seen by the trainees as the key elements: it is through these that they will be able to repeat, practice, and apply the material they are learning. This is particularly true of material which is new or unfamiliar to the trainees, which is one reason I asked you a few pages back to identify in your contents list new terms from ones which can be assumed as prior knowledge.

Try now to produce a draft list of key activities for your module. Do not worry if at this stage you cannot produce a complete list: more ideas for activities will come to you when you start writing. But try now to produce examples of what you see as important exercises or activities to

include in your module.

In Panel 8 below is an example of a student activity related to objective (ii) from Panel 7.

Panel 8 : Example activity for a module on Diagnostic Techniques : Personnel and Facilities

(Related to Objective (ii), Panel 7)

Obtain from your Ministry's accounts division that deals with teacher salary payments, or from your Ministry Statistical Office, current data on the geographical distribution of qualified and unqualified secondary school teachers in your country or region. Design and complete a table to present this data, classified by:

- *urban/rural location*
- *qualified and unqualified teachers*
- *male and female teachers*

The third idea for operationalising content which I want to introduce at this stage is that of early planning of assessment material for your module. You will find a more detailed discussion of assessment methods and procedures in Section 1 of Module IV in this series, but at this point I want to stress the importance of considering assessment before you start writing your module. Objectives, activities and assessment items are closely inter-related elements of a self-instructional module. And assessment items, like lists of objectives and student activities, will be interpreted by the trainee as indicators of what you, the module author, see as the really important parts of the module.

In practice, there should be two main assessment elements in any self-instructional module:

- self-assessment questions and exercises - at the end of each module, or after each major section of a long module; these give the trainee the chance to review what he has learned and should be accompanied by model answers to provide the necessary feedback.
- monitored questions and exercises, which the student can send or give to a tutor/trainer for the latter to review and comment on.

Test items can take a variety of different forms, (multi-choice questions, short answer questions, essays, pratical tests and so on). We shall look at these in more detail in Module IV when we consider the instructor's role.

Try to draft now some examples of what you see as important test items for your module. These should be strongly related to the module objectives. If, at this stage, you do not want to go so far as writing actual questions, at least indicate what you see as the most important areas and topics for testing, both for self-assessment and monitored assessment.

You have now drafted what you see as the main objectives, activities, and test items for your module. These will provide important guidelines for you when you start writing: at that stage you will almost certainly need to modify and revise them, and perhaps add to them. So do not worry if you are not yet altogether happy with what you have produced so far: you should not treat these first lists as definitive, but as the basic signposts to your module.

Sequence

The final step in producing the 'master-plan' for your module is that of taking a decision on the order in which you are going to present the main concepts and activities to the trainees. This is not always an easy decision: the nature of a printed module inevitably imposes one linear sequence on the material, and yet most topics can be presented in a wide variety of different sequences. And different trainees, with different needs and backgrounds, will not necessarily want to study the material in the sequence which you, as author, might consider most suitable.

However, remember that in your module you will be dealing with a single, discrete item of content which may be relatively small. You are not writing a long text, although you may be planning to prepare a series of modules. In the latter case, the trainee can himself choose the pattern in which he studies individual modules.

There are a number of different criteria you can use in deciding how to order the material in your module. Can you suggest what these might be?

You might have mentioned some of the following:

(i) to start with material with which the trainee is familiar and work towards the less familiar concepts

(ii) to start with examples (e.g. of a principle) then to deduce the underlying principle from the examples.

(iii) the opposite of (ii) - to start with a general principle, then illustrate it with examples

(iv) to follow the 'logic' of the material - often necessary when dealing with quantitative topics e.g. mathematical planning or costing techniques.

(v) to build up a hierarchy whereby higher level concepts are explained with reference to previously taught subsidiary concepts, necessary for understanding of the higher level ones.

(vi) to follow a chronological sequence. e.g. when dealing with material explaining processes or procedures over time (such as, for example, in the teaching of critical path planning methods)

Whatever basis you adopt, one thing you should find helpful is the concept map which you prepared earlier, because this should demonstrate links and relationships between the individual items in your module.

Refer back now to the content summaries (especially the concept map), and the objectives, activities, and assessment suggestions you have already made for your module. Go through all this material together, and spend some time now working out the sequence of presentation which you think would be most suitable for your module. Consider first of all the basis which you are going to use for constructing the sequence. You may find it helpful to present your results as a flow chart, like the one which I used in Figure 2 of module 1.

You should not feel obliged, by the way, to follow this sequence blindly when you start writing. You may well want to modify and improve it, once your written module starts to take shape. But you must start with an initial framework of some sort.

Your Module Plan

You now have nearly all the basic components of the master plan for your module, namely:

(i) the overall aims of the module

(ii) a content outline

(iii) a statement of objectives, with related activities, and draft ideas on assessment materials

(iv) a learning sequence for the trainees to follow

All that is missing from this plan now is:

(v) an estimate of study time needed for going through the module.

Try now to estimate how long you think your 'typical' trainee will need to master the material which you intend teaching in the module. Refer back to the trainee profile which you prepared in Module 1, and your original estimate of trainee time for the overall training programme (prepared in Section 2 of Module 1, when you were considering resources, constraints, and overall structure). Think particularly in terms of the time you believe will be needed for each of the main activities you intend to include in the module, as well as reading time.

You may have found this time estimate difficult to make at this stage, as you have not yet written the module, and you know that different trainees will require different amounts of time. However, it is useful to have a range of student study times in mind when you start writing.

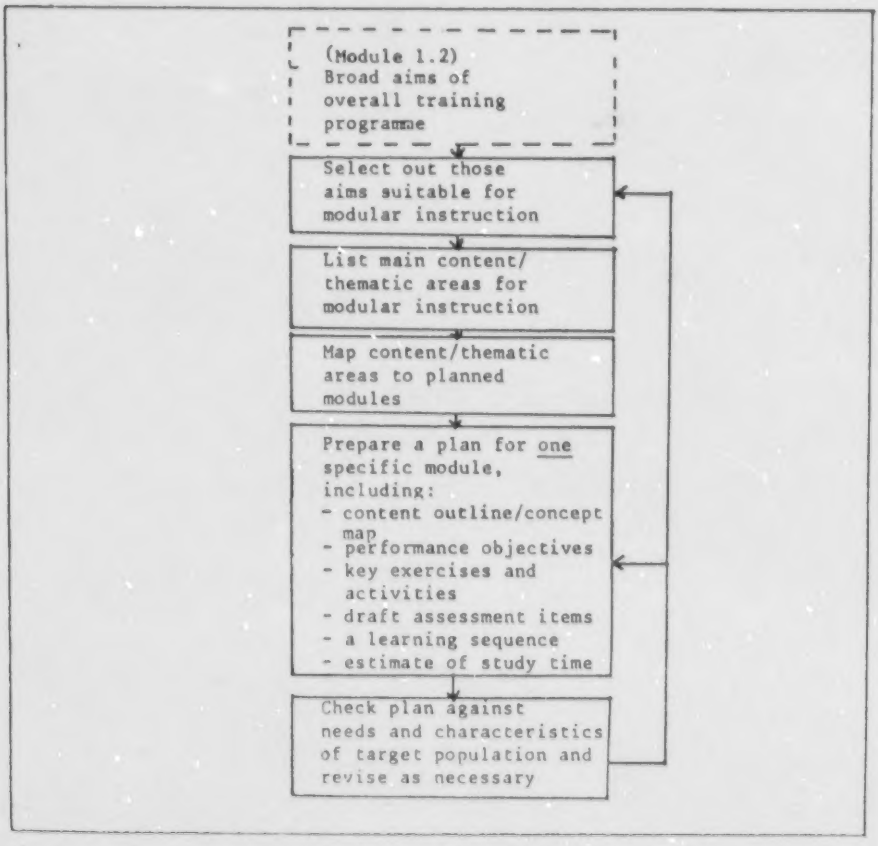
You are now ready to start the active writing process, which will be the subject of the next section of this module. However, before you go

on to this, you may find it useful to go back to the earlier sections of this module, and quickly double-check that what you are producing is relevant to the needs and characteristics of your target group. Once you have started writing, it will be much more difficult to make any necessary changes than at this stage.

Recapitulation

In this section you have gone through the steps outlined in Figure 1 below, proceeding from selection of broad aims for modular instruction to the preparation of an outline plan for a specific module.

Figure 1 : Steps in Planning Your Module


(Module 1.2)
Broad aims of overall training programme
Select out those aims suitable for modular instruction
List main content/ thematic areas for modular instruction
Map content/thematic areas to planned modules
Prepare a plan for one specific module, including:
- content outline/concept map
- performance objectives
- key exercises and activities
- draft assessment items
- a learning sequence
- estimate of study time
Check plan against needs and characteristics of target population and revise as necessary

SECTION 2 STARTING TO WRITE

Summary: In this Section, you are going to start writing the first part of your Module, on the basis of the outline which you have already prepared. You will then be asked to critically analyse this early draft with the aid of some checklists, and re-write it.

Introduction

When you start writing, you may find (if you work anything like I do!) that you will want to change certain aspects of your original outline. You should do this - there is no need to feel totally bound by the plan which you prepared in the last section. Developing instructional materials is an iterative process, when first ideas and drafts are almost inevitably influenced and changed by subsequent ones. And indeed, you will be asked in the course of working through this module to re-draft your own material several times. Furthermore, different individuals have different ways of going about a writing task: some can sit down and write faithfully to a pre-structured plan and sequence; others seem to adopt an apparently more haphazard approach, flitting from one part to another, going back to original objectives and altering them, changing the sequence in mid-stream, and so on. The finished product may well be just as effective in both cases. The important thing for you is to decide on your own preferred way of going about the writing task and to work within its constraints.

Your Approach and Writing Style

You may be wondering what sort of approach would be most appropriate in writing self-instructional materials. You will already have had experience of writing - reports, or academic papers, or maybe text books.

Which written style do you think would be most suitable to use for a self-instructional text, of those below:

- a report? - an academic paper? - a text book?

I would say that none of the above represent the style in which self-instructional materials should be written. Reports tend to use a dry, factual approach to a given issue, or to represent a complete and comprehensive summary of a situation. Textbooks are often intended primarily for reference purposes, an over-riding intention often being accuracy and unbiased presentation of a given body of knowledge. Academic papers are usually addressed to fellow specialists, are essentially for reference purposes, and assume prior knowledge of the subject and familiarity with the conventions used in treating it. None of these three approaches to writing leave much scope for the reader who is asked to learn from the material to do more than attempt to memorise what he reads.

It is perhaps more fruitful to consider your approach by thinking of different forms of spoken communication. You have probably been involved in working with trainees in a variety of face-to-face situations: lectures, seminars, workshops, individual conversations.

In writing self-instructional material, which of these situations do you think might be the closest parallel to adopt in determining your approach

- a lecture?
- a seminar?
- a workshop?
- an individual conversation?

> *I would say that a lecture does definitely not represent a suitable approach, as a lecture is predominately a one-way communication, with virtually no dialogue between trainer and trainee. Good self-instructional materials should have some of the characteristics of a seminar - in which questions are posed and answered; of a workshop-in which exercises and activities are performed; and of a conversation - in which an individual's understanding is probed, and feed-back can be given on a personal basis.*

So when you start writing, try to imagine that you are addressing yourself to a single trainee, or a small group of trainees, and try to reproduce in your writing a conversational style. Try to simulate in print a tutorial situation, by giving your reader frequent opportunities to think about and test his comprehension of what you are telling him. Do this by using exercises and activities in the text - in the way I have done in writing this module. Use the activities which you have already drafted, plus others you may think of, as the key framework for your module, and make sure these exemplify the objectives which you've already defined.

Now write the first draft of the first few pages of your module. Leave a very wide margin down one side of the paper you are using, and plenty of space between each line of writing, as I will be asking you to annotate this draft later on, prior to re-writing it. Spend at least an hour on this activity, or more time if you wish to. Cover the first - or introductory - section of your module, according to the sequence plan you've already designed.

Whilst writing this first draft, you may have come across a number of problems (e.g. difficult concepts which you were not sure how to treat). If you have the opportunity, try showing your draft to a colleague at this point and discussing it together. You may well find that such a discussion will help to resolve some of these problems.

In a moment I am going to ask you to re-write your first draft, after presenting you with some ideas which I hope might give you clues to improving it. We will look at these ideas under these headings: content, activities and exercises, language. For each heading you will find, after a brief discussion, a checklist which you can apply to your draft as a means to identifying possible areas for improvement.

Content

The eventual content of your final module should, of course, be firmly based on your content outline - the original one you drew up, modified as necessary as your ideas for the module developed. Inter-relationships between separate content items - concepts, data, skill elements and so on - should be readily apparent in your draft and reinforced where necessary. Where possible, content should be related to your trainee's own experience - either by using relevant national or regional data directly, or by asking the trainee to apply the ideas you are developing to his or her own situation. Concrete examples, especially of more difficult concepts, should be given wherever possible. Finally, new and technical terms which you have reason to believe may not be familiar to all your readers should be carefully introduced and defined when they are first used. When you first drew up your initial contents outline, you will remember that I asked you to identify any new and technical terms, and differentiate them clearly from those terms which you are assuming the trainee already knows. You should go back to this list and check that all

new terms have been explained in your draft.

Read through your draft now and apply the 'content checklist' below to it, making any necessary annotations on your draft to help you in re-writing it.

Figure 2 : Content Checklist

Item	Action
Does content of draft correspond to original content outline?	If not, either modify your original outline, or your draft
Are inter-relationships between content items clear in your draft (check against your concept map)?	If not, annotate your draft to make these inter-relationships more evident
Does content relate to trainee's own experience and situation?	If not, give more examples, or ask trainee to apply the content to his or her own situation.
Are all new technical terms explained when you first use them?	If not, give definitions; ask student to use the terms (e.g. in an exercise).

When you have finished making any necessary annotations to your draft, continue with this section. Do not start re-writing your draft yet.

Activities and Exercises

You will have included in your draft some of the activities and exercises which you prepared when you were planning your module, and you may have thought of new ones to include whilst you were writing. Any new ones should relate to your learning objectives for the module, and give the trainees a chance to practice, rehearse or apply these objectives.

The types of activities and exercises which you can use can be very varied, and you may be having difficulty in deciding which type is most appropriate to the individual content items and objectives you are covering. If this is the case, you may find it helpful to consider exercises and activities under four broad headings, corresponding to levels of objectives of increasing sophistication. The headings below are arranged according to the type of mental activity they require of the trainee:

(i) to recall, identify, or define important facts, principles or concepts (e.g "List the factors which need to be considered in planning a school building")

(ii) to distinguish between examples and non-examples of a principle or concept, or to provide examples from one's own personal experience (e.g. "Which of the items below are examples of management data, and which are examples of management information?")

(iii) to apply facts, principles, concepts and techniques to given situations with a view to interpreting or analysing the situation (e.g. "Produce a critical path network based on the data given in Figure X" or "Calculate the promotion rates, repetition rates, and drop-out rates for your country's primary school population data over the period 1975-1980")

(iv) to synthesise new and original solutions and information (e.g. "Design a primary school and community centre complex for a given town in your own county, using local materials and a budget of $X")

In writing your exercises and activities, unless the principal aim of your module is concerned with merely memorising a given body of knowledge you should try to ensure that you give sufficient weight to non-trivial exercises of types (ii), (iii) and (iv) above.

Finally, you should check your draft exercises to ensure that:

- they are unambiguous (i.e. that the trainee will understand clearly what he is expected to do)
- the trainee will have, from the module or his own experience, the necessary information to complete them
- your answers or discussion which follow the exercises are adequate, and provide the trainee with the feedback he will need and expect.

Now re-read your draft and apply the checklist below to each exercise and activity making any necessary annotations to your text in the process.

Figure 3 Activities and Exercises Checklist

Item	Action
Is the exercise or activity clearly related to the module objectives?	If not, delete it, or modify the objectives if you feel it is of sufficient importance.
Does the exercise or activity involve a mental skill or process which you consider important?	If not, think of a new exercise which does.
Are the instructions for carrying out the exercise or activity clear and unambiguous?	If not, either change the exercise or add the missing information.
Have you provided an adequate answer or discussion for the exercise?	If not, re-write the answer/ discussion section

Continue with this section once you have made your annotations. Do not start re-writing your draft yet.

Language

The style in which you write is a very important factor in holding your students' attention. Earlier in this section I advocated a conversational style as being the most suitable for self-instructional materials that a trainee is studying on his own. When writing in English, it is relatively easy to make suggestions which will help in developing a conversational style. Some of the ideas suggested below will also be valid for other languages too. But take care to use a style which most suits a 'written conversational' idiom if you're writing in other languages than English.

Firstly, speak directly to the student when you write, as I have done with you throughout this module. Use personal pronouns ('I', 'you') instead of impersonal nouns ('the author', 'the trainee'). Avoid long-winded formulations when shorter, more direct ones are possible. For example, use active rather than passive verbs when addressing the trainee (e.g. 'You may refer to the statistical tables in Appendix 2 in answering this question' rather than 'the statistical tables in Appendix 2 may be referred to when the trainee answers this question'). There's no harm, either, in using contractions (e.g. 'can't' rather than 'cannot') when this seems the natural thing to do. Try not to be over-solemn, or pompous: if you have the gift for humour, even try to be light-hearted from time to time when writing. Avoid jargon and technical terms when acceptable simpler or shorter synonyms exist.

If you follow tips of this sort, then you will already be well on the path to achieving good readability for your writing.

In Supplement 2 of this Module you will find details of a procedure for calculating 'Reading Ease Scores', which you might like to use on a sample of your own writing. However, if you do not have time to do this, try at least to check that, as a general rule:

- your average sentence length is around 20 words or so; the longer sentences are,the more difficult it is to understand them.
- you try to avoid words with more than two syllables if you can find shorter synonyms.

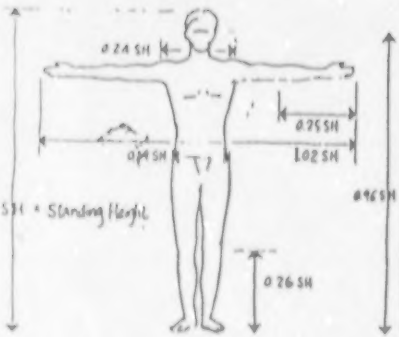
Finally, look for chances to eliminate the written word altogether, whenever you can, by using tables, diagrams, charts, and illustrations. Much of the subject matter about which you will be writing lends itself well to diagrammatic or graphical representation, and you should capitalise on this fact. And when using, for example, graphs or histograms to present statistical data, don't then analyse for the student the information presented. Instead ask the student to study the graph or histogram himself and then answer questions which you've written to test his comprehension. In other words, set activities and exercises which actively involve the student in extracting information from the diagram, illustration or graph. One good, well-designed illustration not only teaches, in many cases, more effectively than pages of prose - it can also make the text more pleasant, and less monotonous to study. I therefore make no excuses for including overleaf as an example, a well designed, well illustrated, information-packed page from a Unit on School Building Costs produced by the Unesco Regional Office in Bangkok (See Figure 4).

If you have doubts about your own skills in drawing charts, graphs and illustrations, and don't have access to a professional draftsman or designer, then try to find a colleague who has some talents in this area to help you. Even amateurish illustrations can be better than pages of dense prose if they can communicate your intentions more directly.

Figure 4 : Example page showing use of illustrations (from course material produced in the Unesco office in Bangkok)

REFERENCE: 2, 3, 4, 22, 84, 85, 87, 88, 89, 90	ANTHROPOMETRICS	18	UNIT IV DESIGN BASIC ELEMENTS	59

RELATIONSHIP OF SIZE OF THE PARTS OF THE BODY TO THE STANDING HEIGHT

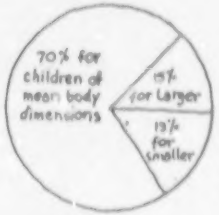


STANDING HEIGHT OF ASIAN CHILDREN

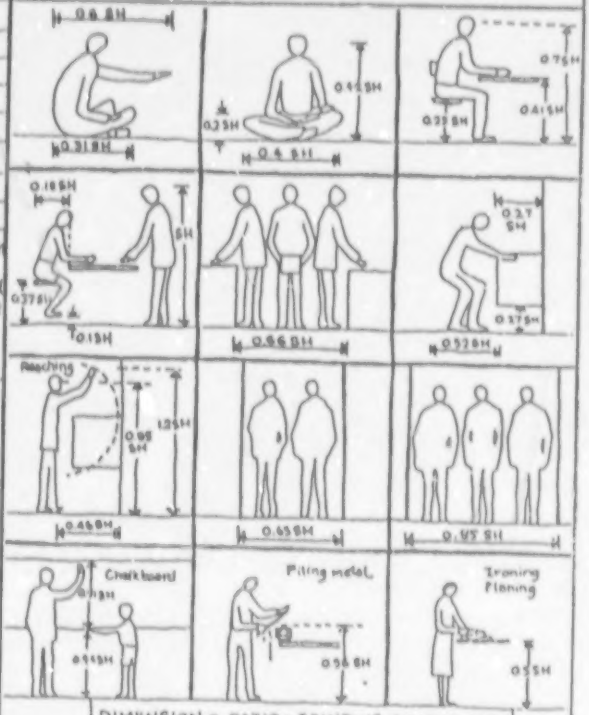
Age in years	Height, cms. Mean	Girls	Boys
12	136	137	137
13	141	142	142
14	146	147	150
15	153	147	155
16	160	150	160
17	163	150	163

Note: 1- Boys are slightly taller than girls of age 18.
2- No average adult will find difficulty in using furniture or fittings designed for a 17-year-old.

RATIO OF FURNITURE USUALLY PROVIDED IN A CLASSROOM (furniture selected for optimum suitability for children):



KEY RATIOS FOR TYPICAL EDUCATIONAL ACTIVITIES



DIMENSION = RATIO x STANDING HEIGHT (SH)

eg. 16-year-old girl 147 cm Seat height = 0.28 x 147 = 39 cm

NOTE : Always use standing-height data for children of your own country see References. If no data available, then collect them

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Now re-read your draft once more, this time to analyse your writing style, its readability, and the scope for replacing text with diagrams, charts and other illustrations. Use the check list below to help you.

Figure 5 : Language Checklist

Item	Action
Have you used a conversational style wherever appropriate?	If not, re-write as necessary, using personal pronouns, and active verbs.
Are there many sentences over 20 words in length?	If so, try to split them into shorter sentences
Is there a high proportion of polysyllabic words in your text?	If so, try to find shorter synonyms wherever possible.
Are there sections of text that can be replaced more effectively by diagrams, charts, or illustrations?	If so, draft a suitable diagram, chart, or illustration and design a student activity/ exercise around it.

YOU NOW HAVE A FULLY ANNOTATED VERSION OF THE DRAFT OF THE FIRST PART OF YOUR MODULE. THE NEXT STEP IS TO RE-WRITE THIS DRAFT ENTIRELY, TAKING INTO ACCOUNT YOUR ANNOTATIONS. DO THIS NOW, BEFORE PROCEEDING TO THE NEXT SECTION.

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SECTION 3: STRUCTURING AND PRESENTING YOUR MODULE

Summary: In this section, you are going to complete writing the text of your module, starting from where you left off at the end of Section 2 and relying in the main on the ideas presented in that section. However, before you start this, I want to introduce a few ideas concerning the overall structure and presentation of your module. These ideas are mainly concerned with enhancing the accessibility and flexibility in use of your finished module.

Introduction

Most printed texts, with the exception of reference books such as encyclopaedias or telephone directories, are designed to be read in a direct sequence from beginning to end, either in entirety (as in a novel) or within a chapter or section (as in many textbooks and readers). As a result they usually have only a limited set of "access devices" to enable the reader to find his way around the text, to look up a specific point, or to check on his knowledge of the subject treated.

Can you name the two or three most frequently found "access devices" in conventional texts such as novels or textbooks?

I can only think of three:

- *a contents page*
- *chapter headings*
- *an index*

Some textbooks may also contain brief chapter overviews and summaries, either at the beginning or end of each chapter. Fewer contain review or self-test questions at the end of each chapter.

Self-instructional modular materials ought to be far more flexible in their modes of use than a conventional text. Students will want to use the module in a variety of ways, for example:

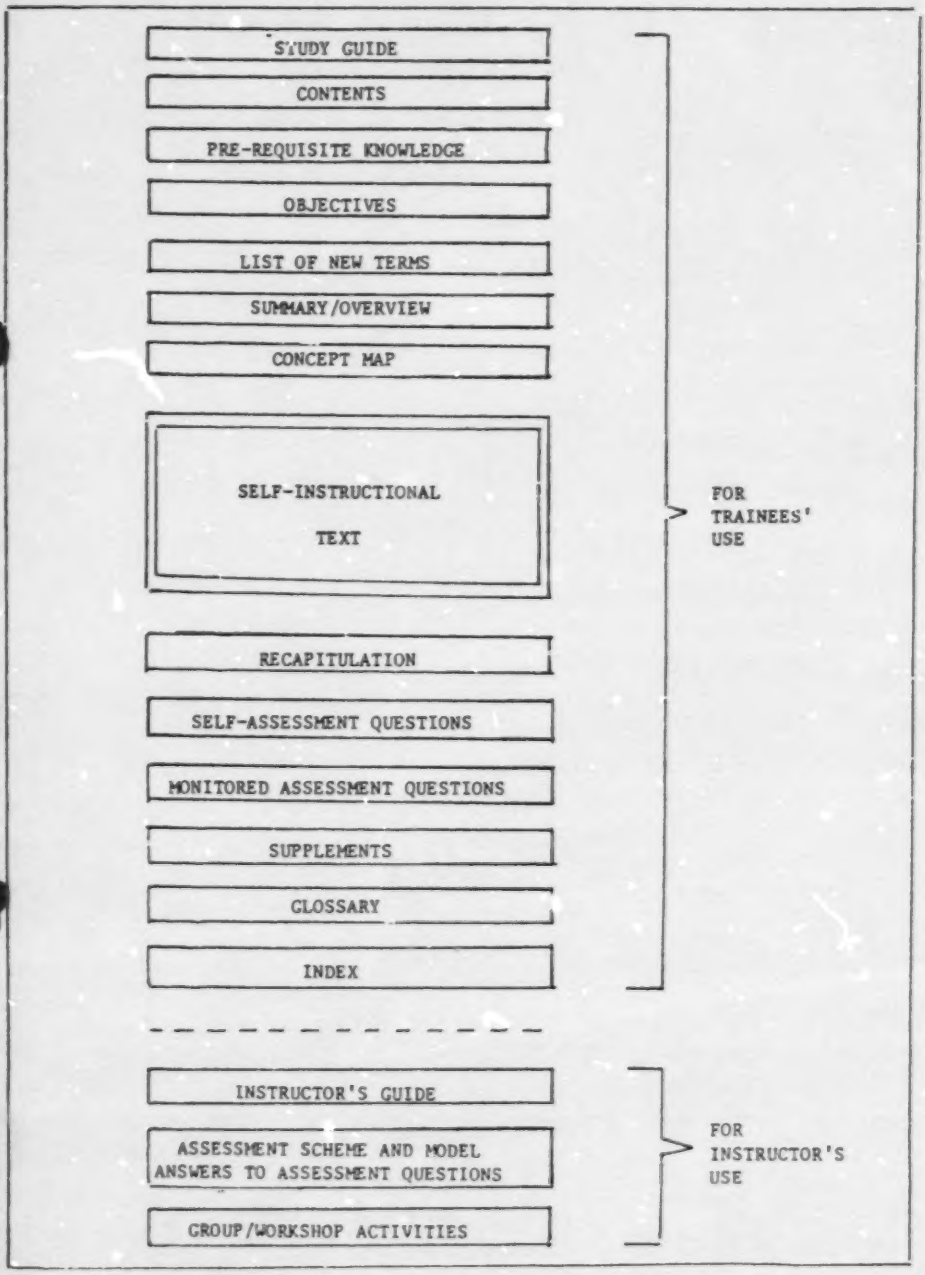
- to find out whether they need to study it at all
- to learn new skills and knowledge
- to test their mastery of the subjects treated
- to review, rapidly, the content of the module
- to use it as a reference book
- to look up definitions
- to decide whether to concentrate on, or conversely, miss out, a particular section
- to revise

In addition, there is another potential user of your module whom we've largely ignored so far - the instructor who may be involved in planning and running a training programme of which the modular materials form one particular part. The same instructor, or another one, may also be involved in marking, correcting and providing feedback on the trainee's work, if monitored assessment forms part of the scheme of use for the module. In both cases, additional materials will be needed for the instructor(s). We will return to this particular issue in Module IV (Section 1) without developing it further at this point. Nevertheless, in writing your module you should remember to keep notes of any points which you think will be useful in preparing an instructor's guide.

Modular Components

Figure 6 below lists the various components, in addition to your actual teaching text, which you may well like to consider for inclusion in your module. For any given module, you may not need or wish to include all these items, but you should be aware of the possibilities available. Each of these components adds to the overall accessibility and flexibility of your module when it is used.

Figure 6 : Possible Components of a Module



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Look at the various components labelled in Figure 6 as being "for the trainees' use", and which precede and follow the self-instructional text. These are what I referred to earlier as 'access devices'. Which of these have you already drafted?

In Section 1 ('Planning Your Module') I suggested that you prepared:

- *a contents outline, from which a contents list is easily derived once you have completed your text*
- *a list of learning objectives*
- *a concept map*
- *a list of new terms, concepts and principles*
- *some self-test questions*
- *some monitored assessment questions*

So already the list of components in Figure 6 should appear a little less formidable! In fact, you already have a good proportion of them in draft form. You will find brief notes on these 'access devices' below.

'Acces' Devices Surrounding the Text

Study Guide: An introduction to using the module within the framework of the overall training programme, with hints about study methods and self-assessment techniques. Particularly important for trainees who are new to independent study methods. (See module IV, section 2

Contents: A straightforward contents list with page references

Prerequisite Knowledge: A brief indication of what knowledge and skills are being taken for granted by the module author: this enables a potential user to check immediately whether he is at the right level to start, or whether he needs to refer to an earlier module first.

Objectives: A statement of learning objectives which will give the trainee a clear picture of what he is expected to be able to do after completing the module.

List of New Terms: A list of new technical terms, concepts and principles introduced and used in the module.

Summary/ Overview: A brief (one or two paragraphs) summary of the main scope of the module.

Concept map: A diagram showing inter-relationships between the main concepts, principles, and facts used in the module. Helps the trainee gain a rapid picture of the field.

Recapitulation: In some cases, a summary (looking forward) and a recapitulation (reviewing) may be necessary, especially for 'dense' or conceptually difficult material.

Self test questions: Questions and exercises based on the module objectives, with model answers and commentary provided: allow the trainee to test his learning, and to revise the material.

Monitored Assessment Questions: Questions, based on the module objectives, which will be marked and corrected by an instructor who will also be responsible for providing the trainee with feedback.

Supplements: Remedial (for trainees having difficulties), or advanced (for trainees wishing to go further into a given topic) supplements can be included at the end of the module. This can be especially useful for important material which is otherwise likely to break the flow of the main text (see the supplements to these modules - particularly the one on Learning Methods). It is one of the few devices that can be used to successfully cope with differences in interest and prior knowledge between different trainees.

Glossary: Brief definitions of new and technical terms, concepts, and principles used in the module- can include page references to points in the text where each term is developed and explained.

Index: Probably only justifiable for modules with long, extensive, text.

Think now about your own module, and decide at this stage which access devices you are going to use, because this may influence the way you write the actual module text.

For some of these 'access devices' you will need to make notes as you are writing your text, to simplify their compilation. One technique is to label a blank sheet of paper (e.g. for a glossary, an index, a list of new technical terms, a list of pre-requisites) and make notes on each as you go along. This will save you having to go through the entire text once you have written it to complete each item.

Signalling the Main Text

Just as you should have a clear idea of which non-text 'access devices' you will use before starting to write your main text, so you should decide at an early stage on how you are going to signpost or 'signal' the main elements of your text.

A clear and consistent use of headings is very important in helping students locate their position in the text. In this series I have opted for running headings which repeat the section title at the top of every page, because of their value in rapid location of a given page. And within sections, I have chosen brief cross-headings, underlined, which separate

discrete items of text one from the other. Another technique, useful for revision and rapid location of material within a page, is to use brief side-headings in the left hand margin.

Items which I want to stand out from the main text - such as charts, check-lists or worked examples, I have boxed in, although a different convention could well have been used.

Finally, and perhaps most importantly, it is essential to signal exercises and activities very clearly. I have used exclamation marks and question marks, with indentation and answers/commentary in italics to do this. However, many other conventions are possible. For example, a simple horizontal rule between question and answer, or use of a different type face, or a box drawn around the exercise. The format and convention which you adopt is your own decision, bearing in mind technical factors such as page size, type of print faces available, the possible use of colour, and so on. You may decide that you want to put answers and comments to questions at the end of the text (as in the example from the Bangkok Training Course reproduced in the Supplement to Module 1). The important point is to signal clearly to the trainee, in a consistent way, points in the text when you expect him to stop reading and carry out an activity.

WRITING YOUR MODULE

I hope that you are now ready to continue from where you left off at the end of Section 2, and to write an extensive first draft of your module. On the next page you will find a check-list (Figure 7) of the main points which you have covered in Sections 2 and 3. Use it as a guide, referring back to the sections themselves as and when you need to. Set aside sufficient time for your writing task - probably around 10 - 30 hours, depending on the length of your module. And set yourself a deadline for when you will have your draft ready. Good luck!

Figure 7 : Writing Checklist (1)

1. Do include *access devices* -- introduction, contents list, summaries, glossary, index, headings, etc. -- where appropriate.
2. Do cater for *remedial* and *enrichment* work where appropriate.
3. Do simulate a *tutorial-in-print* by including *exercises* -- questions and activities to give the student practice towards the lesson objectives.
4. Do write *conversationally* -- personal pronouns, active verbs, contractions, rhetorical questions, lightness of touch.
5. Do write *short sentences*, an average of 20 words, say.
6. Do use *short words*, except where long ones are essential .
7. Do *avoid* unnecessary jargon.
8. Do *define new terms* -- more than once if necessary .
9. Do *relate* your teaching to the student's experience, by pitching it at the right level of prior knowledge and by choosing comprehensible examples, non-examples, and analogies.
10. Do use *illustrations* (photographs, diagrams, tables, etc.) where they will save you writing long-winded or inadequate verbal descriptions.
11. Do *avoid* over-loading illustrations with information that the student does not need.
12. Do base *exercises* on, or *'talk student through'*, any important illustrations.
13. Do keep the student *fully informed* throughout about what he is supposed to be doing.

    And finally:
14. Do *enjoy* writing your lesson -- if you do, your student may enjoy reading it!

(1) taken from : How To Develop Self-Instructional Teaching, the Open University, 1980.

SECTION 4 : TRYING OUT YOUR MODULE

Summary: This section covers step 11 of Figure 2 in Module 1 (Systematic Planning of Training), namely the 'trying out and revision' of your module. Procedures are suggested for evaluating both the content and teaching effectiveness of your module. You will be asked to carry out both types of evaluation on your first draft, and revise it in the light of the feedback which you obtain.

Why try out your module?

If you imagined that, after the end of the previous section, you had practically finished all the tasks involved in writing your module, I'm afraid you're going to be disappointed! What you have produced so far is (I hope) a carefully prepared extensive first draft, which you have probably re-read yourself and already modified and improved to some extent. However, you are probably the only person who has seen it so far, unless that is, you have already shown it to some colleagues and tried to elicit their comments.

Why do you think you should now try out your draft, and who do you think you should use as guinea-pigs?

There are two principal reasons why you should do this, and two different groups of people you should involve:

(i) to check the accuracy and acceptability of the content of your module: for this purpose you should use a colleague (or colleagues) in the role of an 'academic assessor'.

(ii) to check on how effective the module is as a teaching device;

> *this includes detection of ambiguities, of points of conceptual and practical difficulty, and of what is actually learnt from the module. For this purpose you should use a sample of your future trainees, or if this is not possible, subjects who resemble them closely in profile and background.*

You will then need to incorporate into your draft the comments, reactions, and ideas you glean from these two groups: this process may involve anything ranging from a few minor corrections, to a major revision of everything you have written. However painful it may turn out to be, remember that you are writing for students who are going to be studying primarily on their own, and who are unable to turn to an instructor for clarification of difficult points or of errors in the text. So you owe it to them to produce the best product you can.

Content Evaluation

This is a relatively straightforward affair, which ideally you should carry out before trying out your module on representative trainees. This will give you the chance to correct any errors of fact or balance in the content of the module before you test it on students.

Try to identify two or three colleagues who are specialists in the topic covered by the module and who, preferably, are also familiar with the needs and backgrounds of your trainees. If you can find someone who is also an experienced instructor or trainer in the field, so much the better, as he or she will also be familiar with the types of learning difficulties normally encountered by trainees. If you can find a means of paying each of these people a small fee for assessing your module, you may find it will help ensure their active cooperation.

Ask each of these 'assessors' to read through your module and annotate it with their comments. It will facilitate their task, and your analysis of

their reactions, if you provide them with a brief checklist of questions or points which you wish them to cover. You will find below a draft of such a checklist (Figure 8), which you may wish to use as it stands, or in a modified format.

Figure 8 : Example of a checklist for Content Evaluation

Please read through the enclosed training module, and annotate it with the following questions in mind:

(i) are there any factual inaccuracies?

(ii) can you suggest examples of more up-to-date or relevant material?

(iii) are statements of fact that the author makes sufficiently supported by evidence?

(iv) can you identify examples of oversimplification or other types of misleading statement in the author's presentation?

(v) Can you suggest more appropriate or relevant examples of learning exercises and activities?

(vi) Do you agree with the answers and comments that the author gives to exercises, activities, and questions in the text of the module and the self-assessment materials?

(vii) Has the author given adequate coverage and rehearsal of concepts and points which you believe are particularly difficult for trainees to learn?

(viii) Are any visual materials (e.g. graphs, tables, charts) unambiguous and accurately labelled?

Use the checklist above, or your own modified version of it, to obtain comments from at least one or two colleagues on your draft. Try, if possible, to sit with them when they are working through the module. Otherwise, set them a date by which you want their reactions in writing.

When you get back the results of your content evaluation, incorporate any necessary comments and suggestions into your draft. Then get it re-typed in preparation for a try-out on some students.

Teaching Evaluation

There are three different and complementary approaches which you can use for trying out your module on potential or actual trainees. Ideally you should use all three methods, but time and resources may not permit this. Whatever method(s) you use, it is essential to make quite clear to the people who agree to participate (let's call them the "testers") that it is the module which you are testing, and not them. Before they start, you should point out that any failure to understand or learn from the module is a failure of the training material, and not an indication of their incompetence.

The first method is called a tutorial tryout, and I would recommend this as being absolutely essential to undertake. It will take you at the most one day, assuming that you can easily locate a suitable 'tester', who should ideally be drawn from your target population of trainees. It involves neither significant use of resources nor any particular skills in evaluation methodology on your part. The method simply involves you in sitting with the trainee as he works through the module, in an office where you will not be interrupted, and following the general procedure outlined in Figure 9 below.

Figure 9 : Checklist for Tutorial Tryout

1. Ask the tester to work through the end-of-module test and attempt to answer each question. This will give you an indication of his prior knowledge of the material.

2. Note the time at which the tester starts the module; also overall times for each section and for any particularly long or important activities and exercises.

3. Ask the tester to cover up (with a piece of card) your answers to and comments on activities and exercises in the text, and only to read them when he has given you his answer (either verbally or in writing). Once he has answered, ask for his views on your model answer or commentary. Note down both his answers and his comments on your answer, especially when he answers incorrectly, or is not satisfied with your answer/commentary.

4. Watch out for clues such as puzzled looks, impatience, boredom. When you notice signs like this, ask the tester what the problem is. Take notes.

5. Note down any points on which the tester asks for clarification, and any difficulties which he has in following the instructions for using the module materials.

6. When the tester has completed the module, ask him to go through the end-of-module test again. If your module has been successful, he should now be able to answer questions he could not answer correctly at the beginning. Discuss his answers with him. Note down any points of interest.

7. Ask the trainee if he has any final comments or suggestions to make about any specific points or aspects of the module. Note his answers

This procedure, although not particularly scientific, is invaluable in giving you insights into ways of improving your materials. It should reveal ambiguities and points of difficulty very easily. It will also give you some subjective measures of retention and understanding of your module when you compare the results of the pre-test (step 1) with the post-test (step 6). Ideally, you should attempt to carry out two or three such tutorial tryouts, correcting any major problem points and errors each time.

Use the guidelines in the checklist above, with any additional points you may find useful to add, to try out your module on a potential trainee or trainees.

Once you have the results from your tryout(s), use the data you have gathered to re-write your module where you feel it is necessary.

The next step in evaluation of teaching effectiveness should ideally be some sort of field trial. This is the second method which I referred to above.

What would you say was the major drawback of the tutorial tryout method as a means of testing your module fairly?

> *The situation in which such a tryout takes place is very artificial (you were sitting at the tester's side), and quite different from the one which the trainees will be in when studying 'for real'. A field trial avoids this problem because it is an attempt to simulate the actual conditions under which the module will eventually be used.*

A field trial will involve you in identifying a sufficiently large sample of trainees (say 15-30) and asking them to study the module as if 'for real', providing you with their comments on a questionnaire which you will have designed for the purpose. You should also have them carry out a pre and post-test to give you an indicator of comprehension and retention. If your module is going to be used as part of an overall training programme with group and workshop sessions, I would recommend that you use your 'tutorially tested' draft as an experimental version of the module for the entire first group of trainees, thus combining the field trial with the module's first presentation. Then you know that you are collecting data under exactly the conditions for which the module was designed. And if your training programme, like the one I outlined in Module I.2 has group/workshop sections before and after the modular study period, then you can use these profitably. You can apply the pre-test during the first session, and set aside say, half a day during the last group session to administer the post-test and to discuss the module with the trainees, once you have analysed their questionnaire returns and annotated modules.

The sort of questionnaire you might use for collecting information during a field trial could include questions on:

(i) the length of time spent on each section of the module

(ii) the perceived enjoyment and difficulty levels of each section

(iii) a general comment on each section as a whole

(iv) the perceived usefulness levels of specific components (e.g. graphs, supplements, etc.)

Information of the type mentioned in (ii) and (iv) above can be obtained by using simple three, four or five point scales, of the type shown below, where the tester places a tick in the box corresponding to his answer:

Q. How difficult did you find this section?

- ☐ very difficult
- ☐ fairly difficult
- ☐ neither too difficult nor too easy
- ☐ fairly easy
- ☐ very easy

This simple technique will almost certainly identify any sections which are proving particularly troublesome: a section which is consistently rated as 'very difficult' and which a majority of testers did not enjoy studying, will need close examination. However, the answers to these questions will not give you any clues as to how to go about improving the section. For this you will need to encourage testers to annotate their copy of the module, making free comments on any paragraphs, exercises, illustrations etc. which are causing them problems. You should also, of course, ensure that they provide you with their written answers to all the exercises and activities, and encourage them to write these answers before looking at your module answer/commentary. Finally, when they've completed the module, you could ask them what changes, if any, they would like to see made in it.

Try now to design a questionnaire for use in a field trial of your own unit. Make sure that you cover in your questions all the points on which you need to elicit information.

An example questionnaire (at least part of one) for field trial use is shown in Figure 10.

Figure 10: Example of a Field Test Questionnaire

Your Name	Module No. .....

Please answer the set of questions below for each section of the module. Do not start a new section before having done this.

1. How much time did you spend on this section? _____

2. How difficult did you find this section?
   - ☐ very difficult
   - ☐ fairly difficult
   - ☐ just right
   - ☐ fairly easy
   - ☐ very easy

3. How much did you enjoy working through this section?
   - ☐ very much
   - ☐ indifferent
   - ☐ not at all

4. Did you get enough practice in using the ideas in this section?
   - ☐ too much practice
   - ☐ just right
   - ☐ not enough

5. Do you have any general, overall comments you wish to make on this section? If so, use the box on the right.

Now that you have reached the end of the module, please use a blank sheet of paper to note down any general changes which you would like to see in the module other than any specific ones which you may have suggested on your page-by-page comments.

Questionnaires of the type above, of course, need to be complemented by a brief guide to the field trial for the trainees - either through a letter if the whole trial is being conducted at a distance, or in an introductory meeting. Points to cover include:

- a reminder that it is the module that's being tested, not the trainees

- instructions for carrying out the pre and post-test, based on your set of monitored assessment questions of the module
- instructions on annotating the text of the module with comments (remember to leave a sufficiently wide margin on each page of the trial draft for this purpose).

When you have collected and analysed the returns from a field trial, it is worth trying to arrange a meeting with the testers to discuss and review the changes which you would like to make. You can then (at last!) finalise your module for regular use.

However, this should not represent the end of your interest in evaluating the effectiveness of your teaching. The third method of evaluation which I would suggest is that of continuous monitoring of users' reactions to your module over its life-time. A straightforward way of doing this is to ask your trainees, on a routine basis, to fill in a similar questionnaire to your field test one and send it back to you. And, of course, if you have workshops and other group meetings built into your training programme, you can set aside a few hours to discuss with the trainees their reactions to the module. This sort of monitoring may allow you to make any necessary changes to your material on a year-to-year basis. And in any case, you may want to up-date and alter the content from time to time in response to changing needs and new developments in the field.

In the last analysis, the crucial test of the effectiveness of your materials, and of the overall training programme in which they're used, is whether the performance problem which you originally identified has been eliminated. If it hasn't, then you need to start all over again - by re-examining the problem, and by reviewing the overall structure and aims of the training programme. You will see that the planning procedure outlined in Figure 2 of Module I ends with the question: "Is the performance problem solved?

SUPPLEMENT 1 : WRITING PERFORMANCE OBJECTIVES

This supplement, which is linked to Section 1 ('Planning Your Module'), provides a very brief review of the reasons for using performance objectives as a tool for communicating your teaching intentions.

What are performance objectives?

Ideally, a properly worded performance, or learning, objective, should specify:

- an observable performance which can be accepted as clear evidence of learning
- the conditions under which the performance is expected to be executed
- the criteria which will be accepted as a satisfactory level of performance.

Here is an example of a performance objective which fulfils all three of these conditions:

"Given the technical terms listed in the Table below (condition) the trainee should be able to identify correct definitions (performance) of at least 80% of the terms (criteria)."

In practice, your trainees will be able to obtain sufficient guidance as to how and what they are expected to learn if the first two of the above conditions are fulfilled. The third condition (criteria, or level of performance) is more useful to your eventual instructors who will want guidance on what you, as the 'at-a-distance' teacher, assume is an adequate level on which to base any formal assessment

Why use performance objectives?

There are three reasons why it is often of great value to think of 'operationalising' your general training aims in the form of more specific objectives:

(i) you will find that the discipline this imposes on you as a writer

will help you in sorting out your own ideas about what you want to teach, and how you are going to teach it.

(ii) well-formulated objectives, at an appropriate level of generalisation, can be very useful for the trainees; studying primarily on their own, they may have difficulty in understanding precisely what is expected of them. Statements of performance objectives provided with the module helps them to gauge their own learning progress, and to revise their knowledge.

(iii) if your module is going to be used as part of an overall programme involving instructors other than yourself, then they will also need to have a clear idea about the goals of your module. Statements of objectives can help them in :

- helping the trainee to learn
- correcting any work submitted by the trainee as part of the programme

This having been said, you should not imagine that the use of explicit and well-informed objectives is going to solve all your training problems. There are many underlying conceptual difficulties associated with the notion of objectives, which are beyond the scope of this brief supplement. You should treat objectives essentially as tools which can help your trainees and instructors, and the formulation of objectives as a technique which should aid you in clarifying your ideas.

How should objectives be formulated?

When drafting objectives, keep always in your mind the question "what will I accept as evidence that the trainee has understood what I am trying to teach?"

Look at the statements (a) - (g) below. Which of these would you accept as able to provide evidence of understanding on the part of a student who had worked through the module in question?

After studying this module, you should be in a position to:

(a) understand what is meant by 'internal efficiency' of an educational cycle

(b) given the relevant data, compute a wastage ratio by means of a cohort analysis

(c) recognise correct definitions of the following terms, from a list of correct and incorrect definitions:

- long-term plan
- short-term plan
- rolling plan
- single purpose plan

(d) determine the role which an educational planner has to play in relation to constraints

(e) distinguish between external and internal aspects of plan feasibility, giving concrete examples of both

(f) appreciate the various standpoints from which objectives of education are defined

(g) know which policy variables determine the future student flows

---

Of the above examples, only (b), (c) and (e) are reasonably explicit as to what would count as demonstrating satisfactory achievement. The others, partly because they use rather vague terms such as 'understand', 'determine', 'appreciate', and 'know', and partly perhaps because they are too general - more like aims than objectives - do not give clear guidance on

what performance is expected of the student.

So try to use terms which are reasonably explicit in drafting your objectives. If you use vaguer terms such as 'know' or 'understand', give concrete examples of what you would accept as evidence of understanding or knowing the subject.

Levels of Objective

One danger in placing too much stress on clearly explicit objectives is that of trivialising what you are trying to teach - it is relatively easy to draft explicit objectives for straightforward skills such as recalling or recognising definitions, or being able to perform a given statistical computation. It is much more difficult to be explicit about higher level skills involving judgement, or analysis of a novel situation. And it is probable that you see your main aims as a trainer as leading towards these more difficult goals. You may in this case find it helpful to consider organising your objectives into three main groupings, depending on the type of intellectual activity demanded of the student:

- knowledge (as demonstrated by recall or recognition)
- comprehension (as demonstrated by translation, interpretation, and extrapolation)
- higher level skills (as demonstrated by analysis, synthesis, and evaluation or judgement).

Your students - and any instructors or other users of your module - will appreciate guidelines from you as an author as to the relevant importance which you attach to learning objectives at each of these levels. And you will also find an analysis of this sort very helpful in choosing and designing exercises, activites and assessment materials to accompany your module.

SUPPLEMENT 2: CALCULATING READABILITY SCORES

Summary: This supplement shows you how to calculate a Reading Ease Score, applicable to texts written in English. You may find it useful to use this technique to check on the readability of your own materials or of materials written by other people which you may be considering incorporating in a training programme. This supplement thus relates to both Section 2 of this Module, and to Section 1 of Module III.

The Basis of the Flesch 'Reading Ease Score' (RES)

The RES developed by Rudolf Flesch some thirty years ago has stood the test of time as a fairly reliable measure of the level of reading difficulty of texts written in English. It is based on two assumptions:

- that texts with short sentences (i.e. fewer words per sentence) are understood more easily and more rapidly than texts made up of long sentences
- that the more syllables there are in a word, the less likely it is, statistically, that the reader will understand it.

Note that the test is based on written English, and is not valid for any other languages. I feel it may be a useful test for you to apply to your own texts, if you are writing in English, and especially if you are writing for trainees whose mother tongue is not English. However, the RES should only be used as a general guide : there will be many poly-syllabic technical terms which you use in your own specialist field which are familiar to your students, and for which there are no acceptable shorter synonyms. Do not, therefore, automatically feel you must not use such words in your teaching material.

How to Calculate the RES for a piece of text

This is the procedure to adopt:

1 : Count and mark off the first 100 words in the piece of text which you have chosen. Contractions and hyphenated words count as one word.

2 : Count the total number of syllables in the first 100 words which you have marked off.

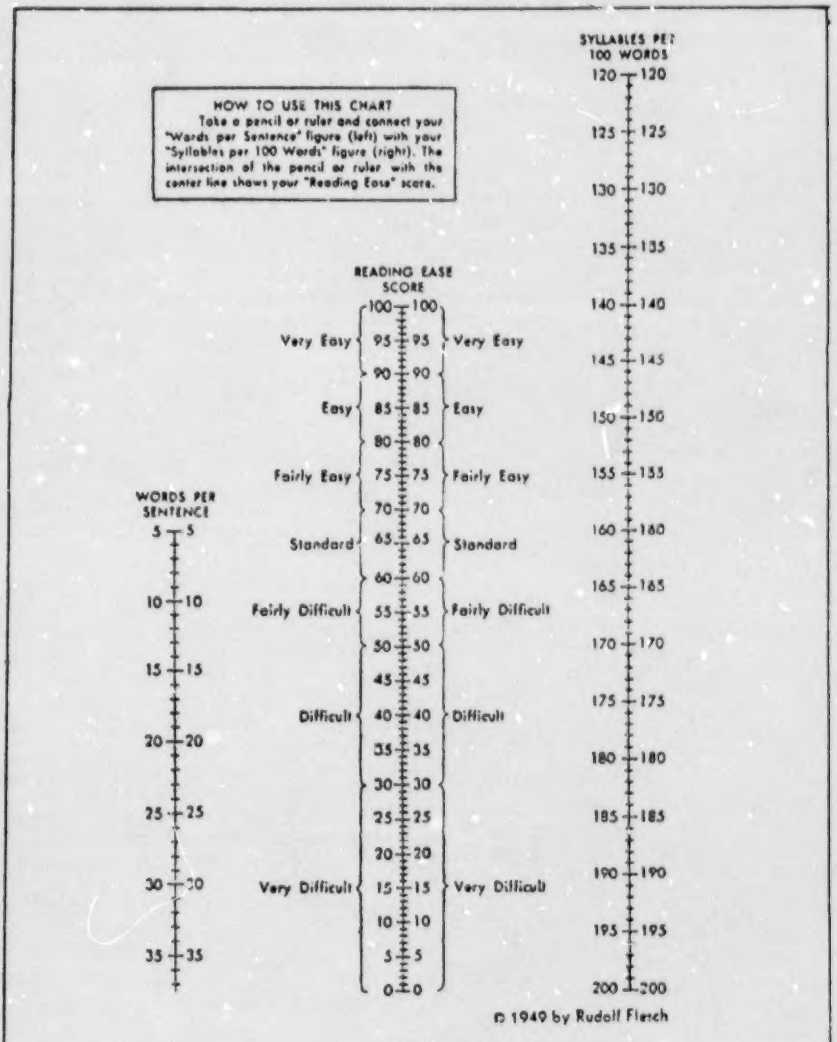
3 : Work out the average number of words per sentence in the text by:

- identifying the sentence which ends nearest to your 100 word mark - it might be the 90th or 110th word, for example
- counting the number of sentences up to and including that one
- dividing the total number of words in these sentences, taken together, by the number of sentences.

Phrases either side of a colon (:), semi-colon (;) or dash (-) should be counted as seperate sentences.

4 : Find the Reading Ease Score by connecting (with a pencil or ruler) your 'words per sentence' figure (from 3 above) with your 'syllables per 100 words figure (from 2 above) on the chart below. The point of intervention with the centre line in the chart gives the score.

Figure 11: Chart for calculating the RES of a piece of text


HOW TO USE THIS CHART
Take a pencil or ruler and connect your "Words per Sentence" figure (left) with your "Syllables per 100 Words" figure (right). The intersection of the pencil or ruler with the center line shows your "Reading Ease" score.
WORDS PER SENTENCE
5 10 15 20 25 30 35
READING EASE SCORE
100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0
Very Easy
Easy
Fairly Easy
Standard
Fairly Difficult
Difficult
Very Difficult
SYLLABLES PER 100 WORDS
120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200
© 1949 by Rudolf Flesch

(From *The Art of Readable Writing*, Rudolf Flesch, 1949)

You will find below two passages of text : calculate the RES for each of them. Does the result correspond to your subjective impression of relative ease of comprehension of each passage?

Passage 1

With regard to the duties of administrators, the prevailing notion is one of supervision and control of teaching activities and of the educational system, somewhat bureaucratic in outlook and far from the new participatory approaches to educational administration. This notion and the posts concerned (supervisor, director of educational unit, central administrators) reflect, on the one hand, a routine view of the internal requirements of the ministries of education (some 80 to 90 per cent of whose budgets consist of current costs and so involve less cumbersome bureaucratic machinery than in other sectors and less rigorous management criteria than in private firms), and, on the other, the actual method of recruitment of their professional staff and the great political importance attaching in the six countries to the duties of personnel administration (appointment, promotion, transfer, etc.).

Passage 2

4. In planning and management, priority means the grading of the claims for resource allocation. Objectives, programmes, projects, agencies etc. are all competitors for resources. The resources being always scarce and limited, each has to make a claim for its share of resources and justify it. The authority concerned with each objective, programme, project or agency would, quite naturally, consider their own activity to be of foremost importance and justify it accordingly. Each one of them would be correct in what they say and their justifications would be no doubt tenable. But everyone cannot get all the resources which are justified as required by them. Someone has to undertake the unpleasant task of not only telling that but grading each one's claim in an order of importance from the point of view of overall needs or policy. This someone is, often, the planner. How does he

For Passage 1, I calculated an average 'words per sentence' figure of 67, and 194 syllables in the first 100 words. The words per sentence figure is so high that it goes off the scale, so one can safely assume a <u>negative</u> RES score! Try to avoid this happening with your own writing. On the

other hand, I calculate the Passage 2 score as being 45, which is within the limits for which you should, in general, be aiming.

Conclusion

You will find it useful to calculate RES scores for passages of your own text. In general, you should aim for scores in the 40-75 range. When you get scores which are very low (i.e. in the 'very difficult' range in the chart), you should consider modifying the text by:

- splitting it up into shorter sentences
- trying to replace, wherever possible and sensible, longer words by shorter ones.

TRAINING MATERIALS IN EDUCATIONAL PLANNING, ADMINISTRATION, AND FACILITIES

A SELF-INSTRUCTIONAL GUIDE TO AUTHORS AND USERS OF SELF-STUDY MATERIALS

MODULE III : EVALUATING USING AND ADAPTING OTHER'S MATERIALS

Section 1 : Evaluating and Using Existing Materials

Section 2 : Transforming Content-Oriented Materials

Division of Educational
Policy and Planning
U N E S C O

A SELF-INSTRUCTIONAL GUIDE TO

AUTHORS AND USERS OF SELF-STUDY MATERIALS

This Series is made up of the following components:

- Introduction and Study Guide
- Module I : PREPARING SELF-STUDY PROGRAMMES
- Module II : PLANNING WRITING AND TESTING SELF-STUDY MATERIALS
- Module III : EVALUATING AND ADAPTING OTHERS' MATERIALS
- Module IV : DEVELOPING GUIDELINES FOR USERS

MODULE III : EVALUATING, USING AND ADAPTING OTHER'S MATERIALS

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MODULE III : EVALUATING, USING AND ADAPTING OTHERS' MATERIALS

OVERVIEW This relatively short module is concerned with the use of existing materials in modular self-study programmes.

Section 1 attempts to give you some clues on evaluating and using materials which are generally available as possible components of a self-study course. It places particular stress on criteria for Selection of such materials, and ways in which they might be used.

Section 2, on the other hand, examines ways in which you might 'transform' specially commissioned content-oriented documents into self-study modules.

There are no supplements associated with this module.

OBJECTIVES When you have worked through this module you should be able to:

1 Identify and apply the necessary criteria for selecting and adapting existing training materials for use in a modular training programme in your own specialist field.

2 Transform content-oriented documents in your own or related subject areas into effective self-study modules.

SECTION 1 EVALUATING AND USING EXISTING MATERIALS

Summary: So far in this Series, the emphasis has been on the preparation of new modular materials for the independent study component of training programmes. However, there is little point in developing new materials in areas where suitable materials already exist and can be used. This section briefly reviews factors to take into account in evaluating existing training materials, and suggests possible approaches to their use as supplements and ancillaries to a module. To a large extent this section is based on material which you have already covered in the previous four sections, as the basic criteria for developing and applying the material which you have written yourself also apply to other material which you may wish to use in your overall training programme.

Introduction

You have devoted a lot of time and effort so far in this Series to developing your skills in writing original self-instructional material for training programmes. I would be very surprised if you had not wondered whether this effort was justified, given that there may well be existing training materials which you could use, thus saving a lot of time and effort in originating new material. Indeed, in this Series, I have resorted to the use of material borrowed and adapted from elsewhere. In the Module 1 Supplement, the review of learning methods is an almost verbatim version of a section of a report on training methods which I prepared for Unesco last year. Rather than write something new in this instance, I preferred to take an existing account which summarised reasonably clearly the main points which I wanted to make. This particular

piece of text, I felt, fitted in well with Section 2 of module I, and gave the information which I wanted to provide you with as a basis for an activity - namely, asking you to design a structure for a training programme. It also had the advantage of providing a range of relevant examples and illustrations of training methods drawn from real-life situations. And I felt that it was pitched at about the right level for the purpose I had in mind : neither too cursory, nor too detailed. However, I decided to adapt slightly the original draft, and to lift it from its original context, rather than refer you to the document in which the original version appeared. This was for two reasons: I could not be sure you would have access to the original document and I did not feel, in any case, that the rest of the document was relevant to your specific needs in this instance.

What would you say were the main criteria to consider in selecting already available materials to use in conjunction with a modular self-instructional text?

I would consider that there are three main sorts of criteria which need to be satisfied, concerning respectively:

- *the content (subject matter, level and relevance)*
- *its acceptability as self-instructional material*
- *the availability of the material*

We will look at each of these three points in the rest of this section.

Content, Level, Relevance

Any existing material to be used as part of a training programme must be relevant to the overall aims of the programme, and thus to the

particular problems which the programme intends to ameliorate. This much is obvious. But when one starts to look at pre-existing texts closely, there are often all sorts of problems which arise. It might not be at the appropriate level for your trainees -- the text could be on the desired subject, but be far too specialised, or too elementary. In both cases, if you use the text, you will have the task of preparing supplementary and explanatory material for your trainees to accompany it.

On the other hand the text might be at the right level, but might contain examples and illustrations which are totally irrelevant to the context of your trainees. This will often be the case with texts produced in, say, the United States, the U.K., or France, aimed at American or European students, and making little reference to problems and issues in the less economically advanced countries. Another more pertinent example is the modular material prepared by the Unesco Regional Office in Bangkok, which I referred to in the Module 1 Supplement. Because the material was specifically designed for use in the Asian countries, it is full of references to, and examples drawn from, these countries. For use in, say, an African or Latin American country, many of these references and examples would need to be changed.

Acceptability as Self-Instructional Material

The next set of features to consider concerns the acceptability of any 'borrowed' material for independent study. Many standard text books, for example, are written as reference (rather than teaching) material. The style of writing may be dry and impersonal, with few opportunities for the reader to stop and test himself or otherwise engage actively with the text. And the readability - as we have defined it in Module II - may be poor.

Review now the points we covered in Module II concerning the characteristics of good independent study materials. What can be derived from these points as possible criteria for acceptability of an existing text for independent study?

I would suggest the following:

(i) that the material actively involves the reader

(ii) that it has, or can be provided with, suitable 'access devices' - especially to link it to the module text which it would accompany

(iii) that it makes good use of charts, graphs, and illustrations where appropriate.

(iv) that the style and language used are suited to your trainees

(v) that the reading ease scores of representative passages are acceptable

It is unlikely that many texts would fit all these criteria, and other ones which you may have included in your list, so you then need to decide to what extent you are prepared to write additional material to accompany the text you want to use. And before doing this, you need to decide how the trainee is going to use the text:

- in parallel with the module text, so that he may be referred to the text from the module, then come back to the module via an exercise or self-assessment question based on that particular extract of text
- as preliminary reading before starting the module: i.e. serving to introduce and orient the student to the subject in question in a general way

- as a supplement to the module, to be studied either as remedial or advanced material for trainees who, respectively, are having difficulty, or who wish to delve more deeply into the topic

Only when you have a clear view of which of these strategies is appropriate, is it possible to specify any additional 'access' material you may need to prepare (see Figure 6 in Module III). And once you have decided on how the material is to be used by the trainee, and you have prepared draft access and supporting/linking materials, you will need to try it out on a group of trainees, with your module text, as part of the tutorial tryout and field test operations. This should reveal fairly clearly any difficulties that may arise, which you will then need to compensate for in preparing your final set of programme materials.

Availability

Finally, it is essential to consider whether a suitable text which you wish to use can actually be made available to your trainees. This seems an obvious point, but there are a number of issues which need to be considered which can, taken together, become fairly complicated. If you intend supplying an entire text to your trainees as part of a programme, you will need to check on its likely local availability, in sufficient numbers,over the period of time which your programme is likely to run. This may involve checking back with the publisher, and investigating his distribution policy - i.e. can the publishers make the text available in sufficient numbers, at a suitable price, in the country where your programme is to be run?

If you only want to use part of a text, and maybe modify and adapt it in various ways, it may be necessary to check on copyright conditions. This may also apply to using translations of parts of existing texts. Either option might involve substantial royalty and copyright fees.

Taking a Decision

I have tried to summarise the various points made above in a checklist (Figure 1). It would be possible to apply weightings to each of the points in the checklist, according to your own specific priorities, and then 'score' a given text which you are considering by awarding points (on, say, a 1-5 scale) for each feature in the list.

Figure 1: Checklist for Assessing Existing Texts

Feature	Weighting	Score	Weighted Score
Content			
Level			
Relevance			
Student-active features			
Writing style			
Language			
Readability (RES Score)			
Use of Illustrations			
Availability			
TOTAL SCORE			

Try now to use this checklist - or a modified version of it - to 'score' a text which you might be considering using as part of your module

> *I would suggest that any text which scores less than half the possible total on your scoring system is not worth using. The work involved in adapting it - or adapting your module to it - would probably be more than that required to write the material from scratch yourself.*

In the next section of this module we look at how you might adapt into modular form content-oriented material which has been specially prepared for you by a subject-matter expert, Such material, if properly prepared, will be pitched at the right level, be relevant, and the content will correspond to your trainees' needs. So your main concern will be in 'transforming' it into a suitable self-study mode.

SECTION 2: TRANSFORMING CONTENT-ORIENTED MATERIALS

Summary This section is aimed at those of you who may be asked to convert a specially-commissioned content document into modular self-study materials.

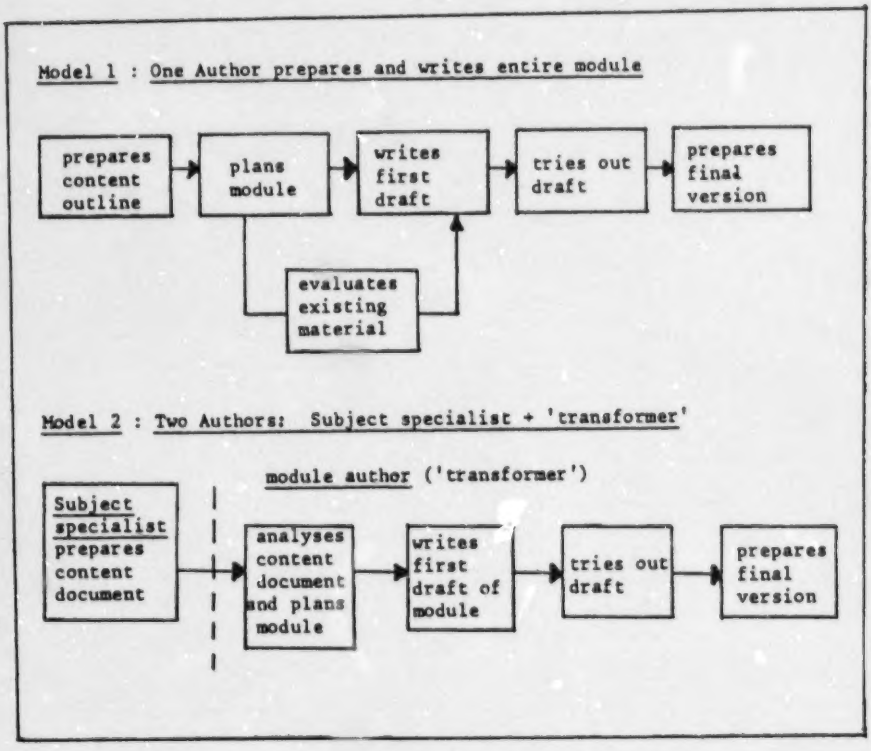
The section analyses the key differences between this procedure and that whereby the same author is responsible for both content and structure of a module. The section relies heavily on the material covered in Module II of this Series.

Introduction

So far, in this Series, it has been taken for granted that you, as a module author, take entire responsibility for developing a module from a content outline to the finished product. The latter may incorporate, as you saw in the previous section, suitable existing training materials already generally available, used, for example, as supplements or as preliminary reading. This general model where you have more or less entire responsibility for both content and module structure, is outlined as 'Model 1' in Figure 2 overleaf.

However, there is an alternative model of materials development in which you may be involved, illustrated by 'Model 2' in Figure 2. In this model, your role would be to 'transform' a detailed content-oriented document, specially commissioned from a subject specialist, into a self-study module or modules.

Figure 2 : Models of Materials Preparation


Model 1 : One Author prepares and writes entire module
prepares content outline
plans module
writes first draft
tries out draft
prepares final version
evaluates existing material
Model 2 : Two Authors: Subject specialist + 'transformer'
module author ('transformer')
Subject specialist prepares content document
analyses content document and plans module
writes first draft of module
tries out draft
prepares final version

It is being envisaged, in fact, that as part of the overall programme of training module production being carried out under the auspices of Unesco's EPP Division, some of the modules will be prepared under the 'Model 2' scheme above. That is, leading subject-matter specialists in administration, planning and facilities design might be asked to prepare detailed content briefs in defined topic areas. These content briefs will be in the form of conventional texts, containing accurate information, of the right scope and level for the trainees. However, they will not be written in modular form, and will need 'transforming' by someone like yourself into a self-study format.

As indicated in 'Model 2' of Figure 2, this 'transformation' basically involves four stages:

(i) an analysis of the content document with a view to drawing up a plan for the module or modules which will be derived from it

(ii) the writing of the first draft of the modular, self-study material

(iii) the trying-out and evaluation of this draft on a representative group of trainees.

(iv) the preparation of a final version of the module, incorporating any revisions resulting from the try-out.

I will briefly review each of these stages in the remainder of this section, drawing principally on the material which we covered in Module II of this Series, and pointing out the principal differences between the steps needed to write a module 'from scratch' and those needed to 'transform' a content document into a module.

Analysing a Content Document to derive a Module Plan

In Section 1 of Module II we reviewed the five principal components of a module plan. Can you recall these briefly? If you have difficulty in remembering them, refer back to Module II.

The five components which I listed (see page 18, Module II) were:

(i) the overall aims of the module

(ii) a content outline

(iii) draft objectives, activities, and assessment items

(iv) a learning sequence

(v) an estimate of study time

Of these items, you will already have, of course, a content outline embedded in the content document, and made explicit to some extent in the document's summary or introduction, and in its contents list. However, you may need to make the content more explicit, and more easy to manipulate, by preparing a list of key terms used in the text, and a concept map to make the relationships between these terms explicit.

However, what will almost certainly br missing from the content-oriented document is a clear indication of learning aims and objectives - in terms of trainees' final performance - for the material. And it is also unlikely that, related to the aims and objectives, there will be any activities and assessment items included in the content draft against which the eventual trainees can assess their learning and test the skills and knowledge which you wish them to acquire.

Referring back to Module I on this Series, can you suggest what particular categories of information you will need to help you in deriving aims, objectives and relevant activities from a content document?

You will need to have a clear idea of the work situation of your trainees, namely:

- *a detailed 'target population profile'*
- *an analysis of the performance problem which they experience in their day-to-day work*

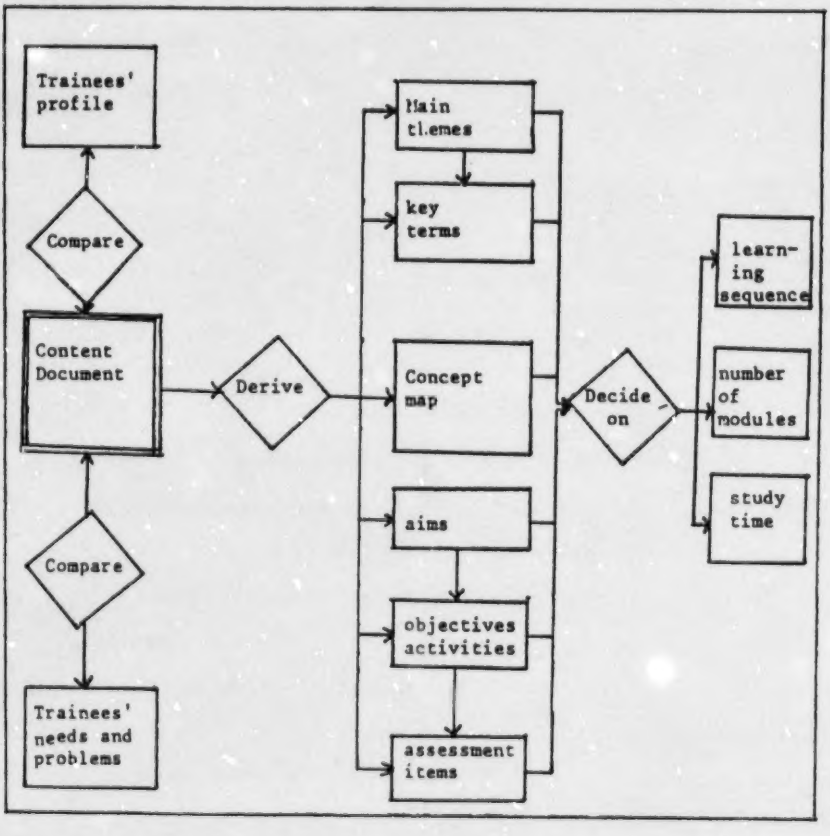
From these two sources, it should be possible, from the content document, to derive and select relevant aims, objectives, activities, and assessment items.

Also, in the light of what you see as your trainees' situation, you will need to consider what is the best sequence for presenting the given content in modular form. You will also need to calculate how many modules

you will produce from the content draft, depending on the time which you think your trainees require to master each major theme of the content document, and the relative importance of each theme. It may well be that the sequence in which the original content document has been drafted is not the most appropriate one for your trainees, and that the subject specialist may have made incorrect assumptions about the relative importance, for your trainees, of each section of the document.

Figure 3 below summarises the main steps involved in planning a module structure from a content oriented document.

Figure 3 : Planning a Module from a Content Document



Use Figure 13, and Section 1 of Module II to work out a module plan from a given content-oriented document. Use separate sheets of paper to note down, as you read through the document:

- main themes and clusters of themes
- a list of key terms (from which you can derive a concept map)
- suggestions for aims
- suggestions for learning objectives, activities and assessment items

---

When you have done this, finalise your module plan by working out:

- *a suitable learning sequence*
- *a sensible division into individual modules (if you plan to have more than one)*
- *an estimated learning time per module*

You are now ready to go on to the next stage, namely writing.

Writing a First Draft

Once you have a satisfactory plan for your module(s), the writing stage is much the same as that outlined in the previous module in this Series (see Sections 2 and 3 of Module II: 'Starting to Write' and 'Structuring and Presenting your Module').

There may, however, be one difference which could lighten your writing task: you may be able to use, almost verbatim, sections of the content document as parts of the modular material - either as the main text, or as special supplements (see previous section of this Module).

What particular points would you need to check, in the prose of the content document, to see whether parts of it would be suitable, unchanged, as sections of self-study module text?

You would need to consider:

- *the style of the prose: is it informal, conversational, and direct - or is it stilted and 'text-bookish'?*
- *the readability of the text - you can check this by calculating an RES score for specific sections you might wish to use*
- *whether illustrations, graphs, tables are used wherever possible and relevant.*

You can use the checklist in Figure 5 of Module II as as guide to help you in analysing these points for selected pieces of text which you are considering.

Having decided to what extent you can use existing sections of the content document as part of your module text, or as special supplements to it, you are ready to start writing. Use the objectives, activities and assessment items which you have already drafted, inserting the activities and assessment items at appropriate points in the text.

Start now to prepare your first draft of the module(s) based on the content outline which you have. You will find it useful, first of all, to re-read Section 3 of Module II: 'Planning and Structuring Your Module'.

When you have completed this draft, go through it again using the 'Writing check-list' in Figure 7 of Module II. Revise any parts which seem weak in the light of this check-list.

Trying Out and Evaluating Your Draft

The procedure to adopt at this stage is identical to that described in Section 4 of Module II. For content evaluation, ensure that you send your draft to the specialist who wrote the content outline, to check that he or she is happy with the way you have treated the original material.

Now re-read Section 4 of Module II: 'Trying Out Your Module', then carry out the steps outlined there for:

- content evaluation
- tutorial tryout
- a field test

Once you have the results of these various evaluations, you will be able to proceed to the final stage: revision of your draft module(s) and preparation of the final version(s).

TRAINING MATERIALS IN EDUCATIONAL PLANNING, ADMINISTRATION, AND FACILITIES

A SELF-INSTRUCTIONAL GUIDE TO AUTHORS AND USERS OF SELF-STUDY MATERIALS

MODULE IV : DEVELOPING GUIDELINES FOR USERS

Section 1 : The Instructor's Role

Section 2 : Guidelines for the Trainee

Division of Educational
Policy and Planning
U N E S C O

A SELF-INSTRUCTIONAL GUIDE TO

AUTHORS AND USERS OF SELF-STUDY MATERIALS

This Series is made up of the following components:

- Introduction and Study Guide
- Module I : PREPARING SELF-STUDY PROGRAMMES
- Module II : PLANNING WRITING AND TESTING SELF-STUDY MATERIALS
- Module-III : EVALUATING AND ADAPTING OTHERS' MATERIALS
- Module IV : DEVELOPING GUIDELINES FOR USERS

MODULE IV : DEVELOPING GUIDELINES FOR USERS

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MODULE IV : DEVELOPING GUIDELINES FOR USERS

OVERVIEW This final Module of Series 0 briefly introduces you to the need for preparing accompanying materials for users of your modules, in the context of an overall training programme.

Section 1 is concerned with preparation of guidance notes for instructors in the programme, with particular stress on correspondence tuition.

Section 2 is aimed at helping you to prepare a Study Guide for your trainees, covering both general and study skills, and programme-specific skills and information.

There are no supplements associated with this Module.

OBJECTIVES When you have completed studying this Module, you should be able to:

(i) prepare a brief instructor's guide for use of your modules in a supported independent study programme

(ii) prepare a Study Guide for trainees outlining useful general study skills, and giving specific advice on use of your modules in the overall training programme

SECTION 1 : THE INSTRUCTOR'S ROLE

Summary: This section briefly outlines the principal roles of an instructor in a training programme which relies predominantly on independent study. The main activity associated with this section is the drafting of an outline 'instructor's guide' to accompany your module.

Introduction

The modular materials which you are preparing are going to be used:

- for 'unsupported' independent study
- for independent study within the support of an overall training programme

In either case, it is probable that you will not be directly involved in the training programme, or the trainee's independent learning processes, once the completed modules are launched. There is likely to be an 'intermediary' between yourself as an 'at-a-distance' teacher and the trainees as they use the modules. This 'intermediary' may be a specialist or manager, in your trainees' department, or a trainer formally responsible for an overall training programme. I am using the term 'instructor' in this section to cover both instances.

What do you think should be the three principal roles of an 'instructor' in respect of the use of modules by trainees?

I would stress the following roles:

(i) assessment of the trainees' learning and performance

(ii) guidance for the trainees in their learning

(iii) linking of independent study of the modules to any other elements in an overall training programme (e.g. workshops, study visits etc.)

I shall look briefly at each of these functions in the rest of this section, and consider the implications for you as a module writer in terms of any instructor materials you will need to write to support your module.

Assessment of the Trainee's Performance

It is possible that your modules are going to be used as learning materials within a broader programme leading to a national certificate or diploma of some sort. In this case, continuous assessment and an end-of-course examination may be required of the trainee, and this raises a number of issues (such as scoring methods, standardisation, pass rates and so on) which I do not intend to cover here. My emphasis in this section is on assessing the learning and performance of the trainees in respect of the training modules, and I am putting aside the question of formal certification completely.

You will need to provide, with your module, assessment instruments which will enable your trainees and instructors to measure the learning outcomes attained.

What are the main varieties of assessment instrument that you have planned for your module? For what purposes are they intended?

I suggested in Section 1 of Module II ('Planning Your Module') two main varieties of assessment.

(i) self assessment questions and exercises, to allow the trainee to test and apply his own knowledge and skills as he works through the module; these should be provided with answers and/or commentary in the module text

(ii) monitored assessment questions, which would be checked and commented on by an instructor; hence the instructor will need a marking guide and commentary provided by you - the module author

It is the second of these types of assessment which I refer to below.

There are basically two sorts of test instrument that you can use in this context - written tests and situational tests. A primary criterion for either type of instrument, of course, is that the individual test questions relate to the performance objectives which you have set for the module. Written tests can be of three basic kinds:

(i) multiple choice questions where the trainee is asked to select one or more responses from a list presented to him. Questions of this sort can be a quick and economical way of testing objectives based on recall, recognition and discrimination. Your instructor notes need only contain an indication of (and rationale for) the correct answer, and a brief commentary on each of the incorrect answers. Unfortunately, it is beyond the scope of this module to give a detailed account of the construction and marking of multiple choice test items; you should easily be able to find standard works on this topic.

(ii) short answer questions, which require the trainee to write a few sentences: for example, to define an important term, or to make a short calculation involving application of a formula to a given set of data. Again, the commentary which you provide for the instructor can be relatively straightforward, and should indicate the sort of guidance needed for the most obvious types of error you might predict.

(iii) essay questions, where the trainee is asked to produce an extended written answer to the question. You should reserve such questions for important, higher level, learning objectives which are directly related to the trainees' jobs. For example, you might present the trainee with some data on a specific schooling problem based on his own context and situation, and ask him to draft a ten-page report outlining his recommendations for solving the problem. The guidance notes for the instructor who will be marking such essays need to be fairly well developed, indicating key points which, taken together, make up an acceptable answer.

The second type of test instrument which I want to briefly mention is called a situational test. Such tests attempt to assess the trainees' performance in a real-life situation. The obvious situation to choose is one which is closely related to the performance problems which were initially identified when the training was being planned. The test would aim to assess a trainee's progress in learning to deal with these problems, and would require the presence of say, a senior colleague to present the problem and ask how the trainee would deal with it. This sort of assessment can probably only be realistically done in the job situation, and by directly observing the trainee's performance. Another possibility is to set up a simulation exercise in a workshop setting, and use this as a vehicle for observing and assessing what has been learnt from the training programme. Guidance material for instructors in this type of situation needs to be developed with great care, and will undoubtedly require some form of tryout before being finalised.

Guidance for the Trainees

The role of a good instructor in an independent study programme is far more than merely assessing the trainees' work and providing feed-back

and commentary on it, although the latter, of course, is a very important function. I am assuming that your own training programme will also require instructors to work 'at-a-distance' in providing more comprehensive guidance to the trainees working and studying on their own. In this case, you should encourage your instructors to :

(i) communicate directly with their group of trainees by, for example, writing to them at the beginning of the programme to introduce themselves as a friendly colleague who is available and willing to help. In this way a dialogue can be established between the trainee and his instructor.

(ii) comment positively on the trainee's written work - by stressing good points first, by giving constructive criticism on errors and weak points, by explaining adequately any comments made on a trainee's script, by using a personal, friendly style, and by returning comments rapidly. Trainees working on their own can rapidly become discouraged if it takes a long time for them to obtain feedback on their work.

(iii) encourage and motivate the trainee by developing throughout the period of the training programme a personal relationship which the trainee can trust and rely on.

(iv) provide the trainee with guidance on supplementary reading, on projects he might visit which illustrate points made in the module, and on contacts he might make who could be of help.

Finally, you should attempt to actively involve instructors with you in mounting and evaluating the programme as a whole, and individual modules in it. The instructors will be in an ideal position to help in this respect: they see and comment on trainees' work, they diagnose learning difficulties, and thus will be able to make positive suggestions about improvement of the module materials.

Linking Modules and Group Instruction Periods

From the comments I have made above, it is evident that your instructors can play an invaluable role in acting as a bridge between the independent study and group study periods of a training programme. Ideally, you should try to arrange for your instructors to do both the correspondence tuition work and run group training and workshop sessions. In this way, they can meet the trainees personally, which will be invaluable in establishing a friendly rapport; it will also permit them to prepare trainees effectively for group sessions, and to relate the instruction in these sessions to the work which trainees have been doing during the independent study phase.

As your exercise for this Section, I would like to ask you now to prepare an outline for an 'Instructor's Guide' to accompany your module. Base it on the points which have been - albeit briefly - made in this section, and on the overall plan for your module.

In your outline for a guide, you should have covered the following points:

(i) the way the module fits into the overall training programme, including any specific links to group and workshop sessions

(ii) the principal objectives and structure of the module

(iii) general advice on working as an 'at-a-distance' instructor

(iv) specific advice on the assessment scheme you have chosen for your module, and the sort of guidance and feedback which you expect the instructor to provide

(v) general advice in helping the trainee to locate supplementary sources of information which he may need or want in addition to the module.

In addition to guidance material for instructors, you will also need to provide your trainees with some advice on self-study methods, and the use of your module(s). This is the subject of the next, and final section, of this Series.

SECTION 2 : GUIDELINES FOR THE TRAINEE

Summary This final section of Series 0 is intended to give you some ideas on preparing guidance materials for trainees, both in independent study skills in general, and in the specific use of the modules which you have prepared as part of an overall training programme.

You will be asked to prepare a draft Study Guide for your trainees as a result of working through this section.

Introduction

I stressed in the introduction to this Series the importance of encouraging your trainees to become independent learners, because this is an essential pre-condition for any successful scheme of in-service training. Particularly for the target-group which you have in mind - hard-pressed planners and administrators working under relatively difficult conditions - it would be utopic to imagine that training needs can be met in full by conventional face-to-face training sessions and workshops. If your trainees are going to effectively up-date and improve their skills and knowledge year by year, they have to take a large measure of personal responsibility for doing this. In practice, this means a committment to independent study, within the sorts of frameworks which have formed the basis for this entire Series. It is therefore important that this final section of the Series should bring your mind back to the need for preparing and helping your future trainees to develop their skills as independent learners.

I cannot provide you with a ready made 'package' or module to accomplish this task, because the advice and help needed will vary according to:

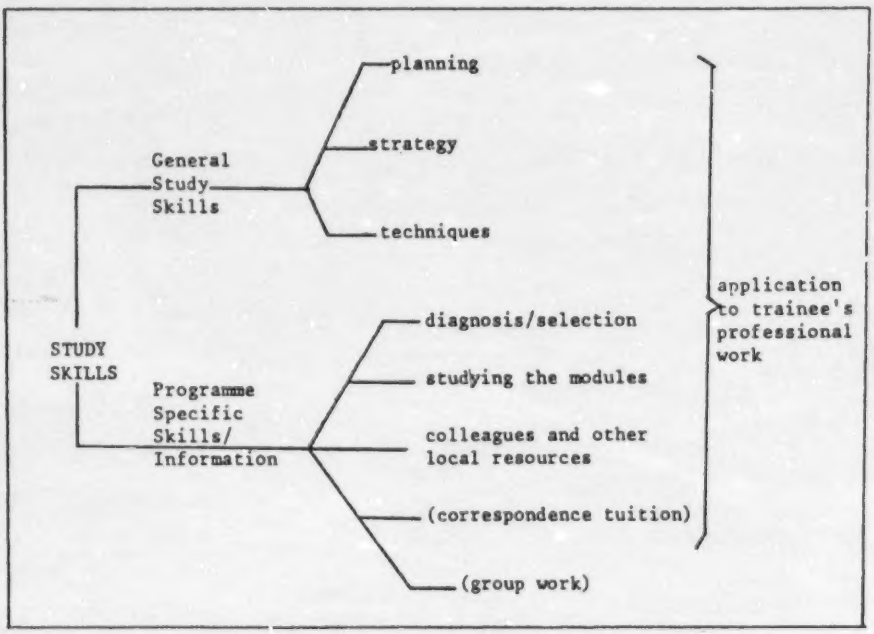
- the characteristics of your group of trainees (their motivations, their previous experiences of training, their social and cultural background ...)
- the structure of the overall training programme in which your modules are going to be used

- the subject matter of the modules themselves, and the particular skills and knowledge which they are designed to teach.

However, I will try briefly in the remainder of this section to review a few ideas which may be useful for you in preparing guidance materials for your trainees. These ideas fall into two main groupings, as shown in Figure 1:

- general study skills
- study skills/information specific to the training programme

Figure 1 : Areas for Study Guidance



General Study Skills

It is possible that your trainees will have only limited experience of formal studying during their adult life - and even that, for some of them, their experience is restricted to the time when they were in school or college. This can be a serious problem. On the other hand, your trainees

are mature, experienced, people with, presumably, fairly clear ideas of the knowledge and skills which they need to carry out their jobs, and a sound basis of professional experience on which to build.

Any general study guidance which you prepare should capitalize on this latter aspect - the existing basis of professional experience of your trainees, and minimise any lack of recent experience of studying. That is, you should aim to build up their confidence in their ability to develop independent study skills, as well as to motivate them for study by stressing its relevance and value to their professional work.

Perhaps one of the most important general aspects of independent study skills is to do with planning of study time. You should aim to help your trainees to plan a study time-table on a week-by-week basis, making realistic allocations of time which could be available for study. This is the first element to consider in devising any indpendent study programme, and most of your trainees may well find that the number of hours available for study each week is fairly limited.

On the chart on the next page, indicate for each waking hour of the day how you imagine your typical trainee might spend a typical week. Include work, family and leisure commitments. Then mark which hours might be available on a regular basis each day for independent study. Calculate daily and weekly totals of study time available.

Study time planning chart

day / time	MON	TUES	WED	THURS	FRI	SAT	SUN
0600							
0700							
0800							
0900							
1000							
1100							
1200							
1300							
1400							
1500							
1600							
1700							
1800							
1900							
2000							
2100							
2200							
2300							
Study hours/ day							

Study time: Weekly TOTAL

On the next page you will find a completed chart for a fairly typical British adult who is studying independently, on a part-time basis. It shows fairly clearly, in that situation, that much more than twelve hours a week study time would be difficult to find, without making undue demands on time for family and other committments.

Example of a study time planning chart

time \ day	MON	TUES	WED	THURS	FRI	SAT	SUN
0600	←		sleep		→	sleep	sleep
0700	←		eat		→	sleep	sleep
0800	←		travel		→	eat	eat
0900	←		work		→	study	family
1000	←		work		→	study	family
1100	←		work		→	family	study
1200	←		work		→	family	eat
1300	←		eat		→	eat	eat
1400	←		work		→	family	study
1500	←		work		→	family	study
1600	←		work		→	family	study
1700	←		travel		→	study	family
1800	←		eat		→	study	eat
1900	family	family	family	family	family	eat	relax
2000	study	family	study	study	study	leisure	relax
2100	study	relax	hobby	study	leisure	leisure	relax
2200	relax	relax	hobby	relax	leisure	leisure	relax
2300	relax	sleep	sleep	sleep	leisure	sleep	sleep
Study hours/ day	2	-	1	2	1	2	4

Study time:
Weekly TOTAL
12 hrs

I would suggest that in preparing guidance material for your own trainees, you ask them to draw up a study time-table of the sort shown above, with a regular and realistic time each week set aside for study - even if it is only 2 or 3 hours per week. You should next recommend - if this is feasible and practical - that your trainees plan ahead - say over a period of two or three months, what they are going to study. This should be

determined by their own learning and professional needs, and the nature and structure of the overall training programme which you have prepared. Also suggest to your trainees that, where possible, they have a fixed place for study - either at the office or at home, with sufficient table space for convenient use of the modules, and adequate lighting.

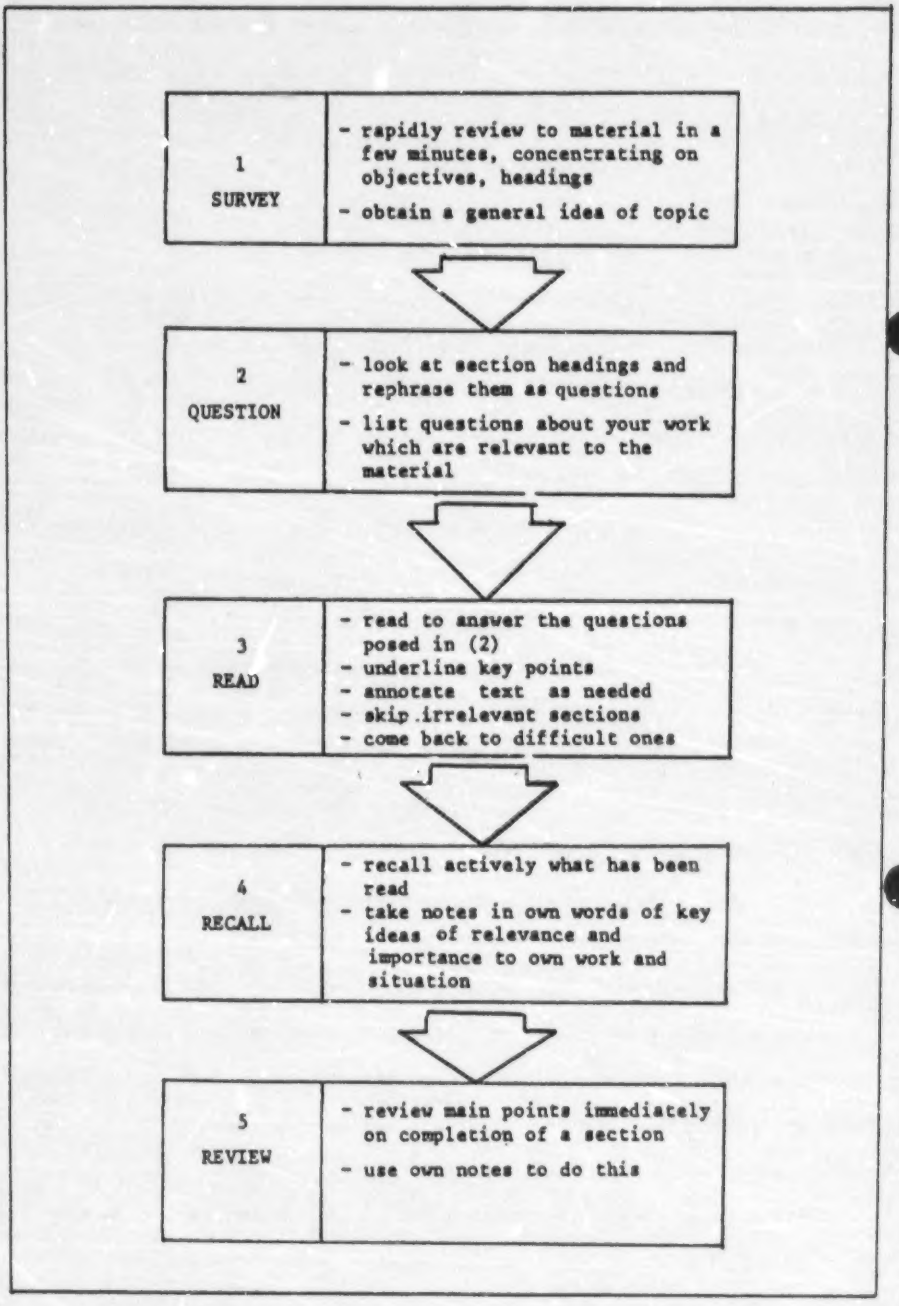
The next area of general advice would concern helping your trainees to develop an effective learning strategy. One popular and effective approach recommended in many independent study programmes is summarised in the five stages listed in Figure 2. These five stages refer to a given section of self-study material to be covered in a single study period (say one hour). Consistent adoption of this strategy will certainly help your trainees. It will also make it clear that you don't expect them to read blindly through each of your modules from page 1 to the end, but that you want them to take an active, individual approach to their reading. This involves quickly surveying the whole material first, then posing relevant questions to which answers are actively sought in the 'reading' phase. These answers and other relevant points, are then consolidated in the two final stages - recall and review - which should also examine critically the application of the material learnt to the trainee's job and situation.

Linked to an effective study strategy is the need for deployment of effective study techniques. The main techniques which trainees will use in your programme will probably be reading and note-taking, and it may be worthwhile giving some advice in these areas.

The important point about reading is probably to encourage your trainees to adopt a flexible approach. Help them to decide when they should skim read, when they should read slowly, and under what conditions they should go back and re-read material (e.g. difficult or important-to them-sections). Bad habits which you should discourage are:

- sub-vocalising : speaking the words under one's breath while reading - this slows down one's reading speed considerably

Figure 2 : The 'Survey-Question-Read-Recall-Review' Strategy


1
SURVEY
- rapidly review to material in a few minutes, concentrating on objectives, headings
- obtain a general idea of topic
2
QUESTION
- look at section headings and rephrase them as questions
- list questions about your work which are relevant to the material
3
READ
- read to answer the questions posed in (2)
- underline key points
- annotate text as needed
- skip irrelevant sections
- come back to difficult ones
4
RECALL
- recall actively what has been read
- take notes in own words of key ideas of relevance and importance to own work and situation
5
REVIEW
- review main points immediately on completion of a section
- use own notes to do this

- regression : going back and re-reading parts of a passage or sentence before getting to the end of a passage; it is better to wait until the passage is completed, and only then to go back and review any unclear points
- reading single words - it is much better to focus on one phrase or cluster of words at a time; this leads to more rapid comprehension than does the habit of reading one word at a time
- always reading at the same speed : encourages your trainees to use different speeds for different purposes : from fast skimming to get a rapid overview of a section to slow, concentrated reading to grasp particularly important or difficult points.

Concerning note-taking, you should encourage the users of your module(s) to first of all decide on what they need from the module, by checking against the objectives and contents list or concept map. Any notes taken during study should relate to these needs - linking the module topics to their professional and job needs and experiences. Discourage your trainees from copying verbatim what is in the module - this is really a waste of time. Encourage them to think about and analyse the module material, then make notes where necessary. Also encourage trainees to work through the self-test materials and activities in your module text - you might, for example, recommend that they keep two note-books:

- one for their own personal notes, oriented particularly towards their job needs
- one for answers to self-test and activity material in the module.

Finally, there is one other area of general study skills which you ought to touch on, and this concerns learning from discussion groups, interviews, workshop situations and any other face-to-face opportunities - either those structured into your programme, or more informal ones. The material on group learning methods in the Supplement to Module I should give you some guidance here. And you should encourage your trainees to make as much use as they can of local resource personnel who might be able to:

- help them with difficult points in the module
- give advice in applying the material in the modules to local problems and circumstances.

Try now to prepare a draft of a guide to general study strategies and skills for your trainees (Part 1 of of a 'Study Guide' for your programme). Before doing this, review the material which you have read so far in this Section, select what you see as relevant, and add any points which you see as being important for the particular circumstances of your trainees.

Your completed 'General study skills guide' need not be more than a few pages in length but you should have covered in it:

- *planning and organisation of study time*
- *guidelines on study strategies*
- *specific skills: reading, note-taking, learning from discussion*
- *the importance of relating study methods to key points which are relevant to the trainees' work and performance problems.*

When you have prepared your draft, you should try it out on a group of trainees, gather their comments and reactions and revise it accordingly.

Programme Specific Skills and Information

In addition to general guidance in study skills, your Study Guide should also contain (part II) specific guidance on use of your modules, and on the overall training programme in which they fit. This second part of the study guide (see Figure 1) should provide advice on:

(i) how to diagnose specific job problems where new knowledge and skills are needed, and on this basis, how to select relevant modules to study. This should not be too difficult for you to do provided that your initial identification of typical performance problems (see Module I Section 2) was reasonably accurate, and that you aimed your modules at the remedying of these problems. Thus you could provide a table, for example, matching commonly encountered job problems to specific modules or certain sections of modules - thus enabling your trainees to select only what they need.

(ii) how to study the modules : a short section of the Study Guide should be devoted to specific advice on studying your module. The stress should be on using the various access devices provided to find one's way around the module, and on the importance of completing the activities and using the self-assessment questions to test and apply the skills and knowledge being taught.

(iii) help from colleagues and use of other local resources: it is particularly important that you stress in the Study Guide the local resources which might be available to your trainees. These resources could include senior colleagues, and other experienced practitioners with whom your trainees can discuss what they are studying and its local relevance and applications; the resources of specialist offices and departments (e.g. Ministry Planning and Statistical offices), and of local educational facilities should not be ignored. Point out to your trainees that wherever possible, they should seek out local and national institutions, school buildings, data, and so on, which can exemplify the ideas they are studying in the module.

(iv) Correspondence Tuition: if this forms an element of your overall training programme, then you will need to give some advice on completing and despatching assignments which are to be marked by an instructor.

(v) Group Work: again, if formal group sessions such as seminars, lectures, workshops etc. form part of the programme, then your trainees will need some preparatory guidelines on both relevant administrative matters, and on how to derive maximum benefit from the sessions. The place and role of any such session in the overall programme, and in relation to the self-study components, needs to be clearly explained.

This second part of your Study Guide should be as short and concise as possible, and should, if feasible, give a contact name and address for your trainees to get in touch with if they are having particular problems.

Now draft Part II of your Study Guide, for use of your modules within the overall training programme structure which you planned in Module I

When you have completed this draft you should try it out on a group of trainees, and revise it as necessary. Also, do not forget to check back after the training programme has started, to gather trainees' reactions to the programme as a whole. You will probably find useful clues and ideas from this source for up-dating and revising your Study Guide.

You have now come to the end of Series 0, and it only remains for me to wish you good luck in developing your training materials.

If you would like to send me your views and comments on any or all of the Modules in this Series, I would be very pleased to hear from you. Write to me c/o the EPP Division, UNESCO, Paris. Any reactions from you would be invaluable for any eventual revision of this Series.